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ABSTRACT

In preparation for a conference held in Paris, France, in November 1994, the Organisation for Economic Cooperation and Development (OECD) launched a 5-year program that involved 20 countries studying the changing role of vocational and technical education and training (VOTEC). This report synthesizes 18 country reports on major recent developments affecting their education systems. The report approaches these issues from three perspectives: a historical analysis of recent reforms and policy debate; an in-depth examination of the objectives, policy orientations, and developments of VOTEC in certain sectors of activity (the construction and tourism industries and metalworking, electronics, and graphic arts); and a general review of the responsiveness and effectiveness of VOTEC systems as a whole. Among the trends noted by the studies were the following: the tendency to lengthen the number of years young people spend in school, the need for retraining throughout working life, the possible coming shortages of skilled technical workers, and the risks of producing "overqualified" workers. Issues identified include the following: the status of VOTEC and its relationship with general education, the status of apprenticeship, labor market training and youth training programs, industry's role in training, concern for quality, the need for evaluation, and the need for collaboration. (KC)

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# THE CHANGING ROLE OF VOCATIONAL AND TECHNICAL EDUCATION AND TRAINING

## SYNTHESIS OF COUNTRY REPORTS

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**(Note by the Secretariat)**

1. The attached document provides a synthesis of eighteen national reports prepared in the framework of the VOTEC activity on "The changing role of vocational and technical education and training".

2. Together with document DEELSA/ED/WD(94)34, this synthesis report was prepared for the high level conference on "Vocational education and training for the 21st century - opening pathways and strengthening professionalism", which takes place on 28 - 30 November 1994 at the OECD in Paris.

3. The author of the report is M. Olivier Bertrand.

4. The report is distributed for **INFORMATION**.

**Summary**

1. This paper synthesises the reports from OECD Member countries, situating the current issues in vocational and technical education and training in a historical context. It reviews the many fundamental reforms that have influenced these countries' systems in recent years. While all these systems preserve their specific features, derived from their institutional and cultural background, they face similar economic and social challenges, most notably the problem of improving the status of vocational streams in relation to general education.

2. A certain convergence can be observed between national policies, and extremes, such as those between highly centralised and decentralised systems of training, are tending to move closer together. In all countries, employers are playing a greater role in the definition of training policy directions and an effort is being made to achieve co-operation between firms and schools. Flexibility is a widely shared objective, in terms of both the structure and content of training.

3. These changes suggest that greater attention be given to assessment and quality control in education as well as to the search for systems of certification and qualifications recognition likely to lead to the attainment of these objectives.

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**Introduction**

1. This report was prepared in the framework of the VOTEC activity on "The changing role of vocational and technical education and training", launched by the Education Committee in 1989. Apart from participation in policy seminars on specific themes, Member countries were invited to prepare analytical reports on major recent developments affecting their education systems. A historical perspective was to provide a solid basis for understanding current situations. The reports were to address the context in which vocational and technical education and training are presently evolving, their objectives, institutional frameworks and policy orientations. The purpose of the reports was to highlight problems rather than simply add further descriptions of education systems to those already available.

2. The meeting of national representatives and experts in March 1990 had established an analytical framework for these studies and suggested a number of issues to be examined in greater detail: the relationship between vocational education and training (VOTEC) on one side and general education on the other; the broadening of vocational education and training; co-operation between schools and enterprises; ways of enhancing quality and effectiveness. Particular attention was to be given to the responsiveness of VOTEC systems - well known for their stability or even inertia - to a continuously changing context. Are they receptive to such changes? Can their responsiveness be improved, especially through more active involvement of different actors?

3. These issues were approached in the country reports and in this synthesis report from three perspectives: a historical analysis of recent reforms and policy debate; an in-depth examination of the objectives, policy orientations and developments of VOTEC in certain sectors of activity; and a general review of the responsiveness and effectiveness of VOTEC systems as a whole.

4. This structure is reflected in the following synthsis report, which begins with a historical review, followed by a summary of results from the sectoral studies and policy conclusions.

5. In view of the considerable amount of information provided in the eighteen reports received from Member countries, this synthesis aims to reflect above all the great diversity of situations observed and of the views expressed in different countries. However, it also reflects the heterogeneity of the reports themselves and it relies more particularly on those contributions which provided in-depth analysis, especially of sectoral developments.

# I. The Historical Evolution: Reforms and Debates

## 1. The changing context: some common trends

6. Over the last few decades, OECD Member countries have experienced fairly similar trends in terms of demographic changes, cyclical and structural changes in their economies and technological development that have directly or indirectly affected vocational and technical education and training.

7. Historically these trends can be summarised as follows:

-- For nearly all OECD Member countries, the 1950s and 1960s were a period of sustained growth: demographic growth on the one hand, resulting in the entry of increasingly larger cohorts into education and training; and economic growth on the other, starting for some with post-war reconstruction (especially in the case of Germany and Japan) and for others (e.g. Australia, Denmark, Finland, New Zealand) with the transition from a mainly agricultural economy to an industrial economy.

-- The 1960s were a period of spectacular technological and industrial expansion. Several countries (e.g. Germany, the United States), were made aware of the importance of science and technology by the launch of the Sputnik in the late 1950s. Considering themselves, rightly or wrongly, to be lagging behind, they saw the development of training as a way to catch up. During this period, industrial growth spurred a demand for trained technical staff, although this was mainly for mass production along Taylorist lines, involving a very fine division of labour and thus a majority of relatively unskilled jobs. Unemployment was generally very low.

-- The context began to change during the 1970s with the oil shocks and the ensuing periods of recession. Demographic growth slowed, with certain countries experiencing for the first time a decline in the numbers entering training or the labour market. This meant that populations were ageing, while social evolution was helping to increase female participation rates.

-- More recently, the problem of access to training and employment for immigrants, ethnic minorities and refugees has been becoming increasingly serious in some countries, especially Canada and the United States, though also in most European countries.

-- Economically, the effects of the internationalisation and intensification of competition have been compounded by the spread of new technologies. This has contributed to rising unemployment in OECD countries, which has been accentuated by the recession during the 1990s. These same factors have led to a restructuring of the economy, especially evident in the drop in industrial employment and the rise in tertiary activities. The latter were until recently the only job-creating activities, but their capacity to create employment seems to have been less evident in recent years.

-- Employers are starting to reconsider the ways in which they organise work. Efficiency, quality, diversification and innovation are all prompting demand for a workforce that is better skilled, more adaptable, better able to work as a team, to show initiative and take responsibility.

8. The question of analysing these new skill requirements and new qualitative needs is mentioned in reports from several of the countries whose current reforms have involved an intensive review of training requirements. It is discussed in particular detail in the report on Sweden. Conversely, the report on France mentions the partly or wholly inadequate nature of quantitative forecasts, especially with regard to assessing training needs. This problem receives very little mention in the reports for other countries, but it probably affects them all to varying degrees.

9. The problems met with in making accurate estimates of economic needs are, along with the broad trends described above, among the issues complicating the readjustment of vocational education and training systems. This point will be discussed in the latter part of the paper. Another question is posed by the rising proportion of services sector jobs, which require either general skills or skills that are peculiar to the employing firm. Is this trend liable to call into question VOTEC's role with regard to *a)* general training and *b)* in-firm training?

## 2. Two periods of reforms

10. Training systems everywhere face the same kind of external conditions which are prompting them to change. Yet they display a very wide diversity, being the product of very different histories and cultures. It is interesting to analyse the ways in which different systems react to the same challenges and how they respond to constantly changing demands as the result of rapid changes not only in technology, products and markets but also in economic conditions.

11. Very broadly speaking, it can be said that there are at least three different types of system:

-- the system of the United States and the commonwealth countries, which mainly used to rely on an extension of general education and, for a minority of young people, on-the-job training in industry after

compulsory education. As will be seen, the United Kingdom does not quite conform to this model in the sense that it increasingly offers a diversity of training possibilities following compulsory schooling.

-- the Germanic tradition, based essentially on a "dual" system of training;

-- the systems of most other countries (notably France, Italy, the Scandinavian countries) comprising two clearly distinct streams of general education and predominantly school-based vocational education.

12. After studying the socio-economic context and looking now at vocational training, we can broadly say that the first of the historical periods mentioned above, the 1950s and 1960s, was one when vocational training was organised and integrated within the education system as a whole and grew in importance. Often. a prime concern was to ensure equal opportunities in terms of socio-economic background.

13. For many countries the second period, from 1975 until the end of the 1980s, was one in which some of the previous period's priorities were challenged. While more importance was being placed on VOTEC because of the role it was expected to play in maintaining national competitiveness, its effectiveness and its relevance were being called into question. Ties with the world of work and co-operation with industry began to be emphasised, but not necessarily in opposition to the frequently expressed concern to open up technical and vocational training more widely and make it more of an instrument for developing personality and citizenship.

14. Country reports describe the transition from the first to the second period in various terms: some (Germany, Switzerland) characterise it as a transition from a phase of quantitative expansion to one of qualitative improvement, from placing priority on institutional and organisational problems to placing it on questions of structure and content (Germany); a shift from the pursuit of industrial aims to that of broader, educational and social aims (Germany). Canada defines the late 1980s as a period of new awareness, with the emergence of the concept of developing human resources and their strategic relationship with economic development.

15. France regards the 1980s as a period of investment in training, following the 1970s during which the training system was consolidated and put to the test when confronted with the first signs of economic crisis. Japan distinguishes between what it sees as periods of reconstruction, strong growth, stability and internationalisation, each with its own training policies.

16. In Italy, vocational training was viewed during the 1950s and 1960s as mainly for the benefit of the individual. During the 1970s it was seen as a social policy instrument and, over the last few years, as a prerequisite for economic development and as an investment.

17. These definitions complement one another, many being applicable to the majority of the countries concerned. One is tempted to set alongside this a matching history of reforms introduced in response to this changing context and changing trends. Such an exercise would be somewhat hazardous though, because of the diversity and the unique features of what countries have inherited from the past, alike in the organisation of VOTEC (e.g. the degree of centralisation or decentralisation), in the structure of the education system (e.g. differentiation between general, technical and vocational education and extent of specialisation), in the greater or lesser involvement of industry and in how VOTEC relates to the world of work. Another way in which countries differ from one another is that some have formalised these developments to a greater extent through institutional reforms, whereas these same developments have been more gradual and less obvious elsewhere.

18. In certain cases, these reforms have been influenced by the political situation, and mention is made of this in some of the country reports. Germany and Austria, for example, note that the agreements which still govern their "dual" system were facilitated by the fact that they were negotiated during a time of broad coalition government involving the two main parties. Change in the political complexion of Sweden's government had an influence as regards the new approaches adopted in the 1990s. In France, while political change during the 1980s caused no actual break, the advent of a socialist government arguably did make for readier assent, especially by the country's teachers, to a greater role for industry in training.

19. All this helps to explain why countries experiencing common trends were nonetheless moving at a somewhat different pace, which makes it hard to establish a precise common chronology of events. It may still be worthwhile, though, to note the most significant dates in countries' reform calendars as illustrating the two periods identified above.

-- It was during the 1950s and 1960s that certain countries laid the legislative foundations for vocational training: Norway's apprenticeship act in 1950, Denmark's in 1956, Finland's National Vocational Training Council in 1967. During the same period, other countries formalised their technical and vocational training structures: Sweden introduced comprehensive schools with a vocational component in 1968-71: Japan followed its basic Education Act of 1947 with a vocational training reform in 1969; Austria introduced its Organisation of Schools Act in 1962; Germany and Austria, following a long period of consultation with employers and unions, enacted legislation in 1969 giving their dual system its present form, while Norway redefined training policy between 1965 and 1969. Canada, a federal country, enacted legislation in 1960 enabling the federal government to assist the provinces and also to set guidelines for their policy. In the United States, the Vocational Education Act of 1963 served much the same purpose.

-- Development and reform continued subsequently, but the late 1980s and early 1990s seem to have been a time of fresh reappraisal of structures and programmes. In the United States, moreover, researchers and decision makers refer to the 1980s as the "decade of

reform", culminating in the enactment of the Carl D. Perkins Vocational and Applied Technology Education Act (Perkins II), the most radical change in the history of Federal participation in the funding of VOTEC.

-- It was also a time of fundamental reform in the structure and organisation of training systems, especially for Portugal in 1986, New Zealand from 1986 to 1989, Finland in the late 1980s, Denmark and Spain in 1990 and Sweden in 1991. In the United Kingdom, following the 1981 New Training Initiative, and in Canada, the late 1980s saw a number of assessments of education and training policy giving rise to proposals for reform. In the United Kingdom, the Education Act of 1988,the creation of the National Council of Vocational Qualifications and the recommendations of the 1991 White Paper on education and training in the twenty-first century led to fundamental reforms. In Australia, the proposals contained in the 1987 report by the Employment and Skill Formation Council for a new integrated system are currently being tried out. In Iceland, an Act of 1988 defined the framework for upper secondary education, following a long period of experiment and discussion. Finally, in Japan, the Vocational Education Act was modified in 1985 with a view to expanding qualifications by continuing training.

20. Although such dates are significant, it needs to be emphasised that changes in VOTEC are not necessarily confined to institutional reforms. In Italy, for example, recent years are considered to have marked a revolution in the way State vocational training operates, even though no conspicuous legislation has been enacted. In the United States too, a process of sweeping change in vocational training and its place in the education system as a whole is now under way, but has yet to be reflected in any institutional change.

21. For a more detailed consideration of these trends we need now to switch from a chronological approach to a thematic approach, looking first at the extension of schooling, then at the status, objectives and organisation of VOTEC, the structure and content of training, the growth of continuing training and its relationship with the world of work.

### 3. Extension of schooling and increased participation

22. Longer schooling for an increasing proportion of young people has been a durable trend in Member countries. It was the result initially of institutional measures to prolong compulsory schooling and subsequently of the effects on post-compulsory education of economic demand for a more highly skilled workforce and, increasingly, of social demand reflecting higher occupational aspirations. In recent years an additional factor has been a desire to postpone entry into the workforce through fear of unemployment. This prolongation of schooling has affected VOTEC, either by delaying the switch to vocational training or because this additional period involves entering VOTEC.

23. In Austria, the period of compulsory schooling was increased in 1962 from eight to nine years, in the form of a year of polytechnical studies (*Polytechnischer Lehrgang*). This was made compulsory for all students not wishing to pursue full-time general education. The vast majority of those completing the polytechnical year subsequently undertake an apprenticeship. This additional year became a controversial issue, because it was only really compulsory for students who were planning to undertake an apprenticeship, not for others. Future apprentices accordingly had to stay on for an extra year, without however acquiring a higher level of training or qualification.

24. In Germany, apprenticeship is accessible from several levels of schooling. The recent trend has been for more young people to enter apprenticeship after obtaining their secondary-leaving certificate (the *Abitur*). It is more or less officially recognised that this means a raising of apprenticeship standards, or at least greater differentiation within the dual system, given that firms tend to adapt training streams and content accordingly.

25. In Belgium, under the 1983 Act, which raised the school leaving age from 16 to 18, these two extra years can be completed on a part-time basis, as in the dual system countries. The prolongation of compulsory schooling thus leaves young people some freedom of choice and consequently more readily reflects individual preferences.

26. The trend towards longer schooling has followed a quite different pattern in France, where traditionally the emphasis is placed on the level of education (in terms of number of years of schooling) rather than on the type of education or occupation. The constant striving for the highest level by young people, often with the prompting of both teachers and parents, usually means pressure to pursue general rather than vocational studies. When youngsters are steered into vocational streams, often as a last resort, they tend to want to pursue their studies as far as possible. The report for France notes that this tendency towards longer schooling, which began in the late 1970s, has had three unexpected outcomes:

-- it has devalued first-level qualifications;

-- educational institutions have become more selective, both officially and unofficially;

-- students have tended not to leave the education system until they have fallen badly behind with their studies, thereby creating particularly adverse conditions for their entry into the labour market.

27. In these circumstances, the policy adopted in the mid-1980s of bringing 80 per cent of each age-group up to baccalaureate level, partly by means of VOTEC streams, is liable to have some perverse effects.

28. In the United States and Japan, where enrolment rates are traditionally higher, most of those staying on are in the general education streams. But, since these countries have no formal vocational training system, this does not

seem to create the same sort of problems. The Japanese report raises the question of a rapidly ageing population, with the possible consequence of a shortage of skilled manpower, especially in small and medium-sized enterprises, and the related need for more young people to be directed into vocational streams.

29. The United Kingdom used to be a notable exception to this tendency for children to stay on at school, since post-compulsory education was mainly a preparation for higher education, while the employment situation and pay scales encouraged young people to go straight into the labour market. Today, official policy is both to encourage young people to stay on longer at school and to provide other training opportunities for school leavers.

30. This problem occurred in Denmark during the early 1970s, when pilot tests of a new training system aroused misgivings on the part of employers' organisations, who were concerned that the system had no mechanism for adjusting the demand for training to industry's placement capacities. The government sought to resolve the problem by regulations and by negotiation. In certain sectors, access to apprenticeships was restricted. A vocational stream was introduced into the schools to alleviate the lack of apprenticeship vacancies. Periods of recession and rising unemployment have generally helped foster a cautious attitude on the part of industry and reduce still further the number of places.

31. In Germany, demographic and economic trends have likewise influenced the balance between the supply of apprenticeship vacancies and the demand for them, and throughout most of the 1980s there was a shortage of apprenticeship places. In the early 1990s, however, a demographic decline combined with the economic upswing associated with unification had the effect that industry, especially the crafts sector, found itself short of applicants.

32. The increasing number of students in general education and in VOTEC education in particular cannot only be considered in a global manner. It is also interesting to take into account the breakdown by sex, occupational sector and skill level. The report from Belgium's Flemish community is one of the few to mention a persistent disparity between young men and young women, but it seems that all countries retain the well-established tradition of steering young men towards industrial training and young women towards the service sector and thus a more school-based form of training. It is also reasonable to assume that the tradition persists more because of the prevailing culture in the workplace than as a result of the training system itself. The reports from both Iceland and Canada note a continuing distinction between "men's" and "women's" jobs. The former observes that training for "women's" work requires a higher level of general education, so that young women as a rule need more time to obtain qualifications than young men.

33. There is probably a link here with the differential development of industrial and services-sector streams. It may be asked whether the growing proportion of tertiary skills reflects an increase of services sector training at the expense of industrial training. This is not just a problem of arithmetic. The lower cost of tertiary training may well be part of the

answer, but the question has already been raised of whether traditional systems -- and particularly school-based vocational education -- are fitted to developing skills which are at the same time broader and more specific than those required by industry.

34. The report from Iceland also refers to the tension that may exist between recognised skilled occupations and others. The former have tended to monopolise training, but this monopoly is now being challenged, and a growing school of thought holds that training programmes must venture into occupational fields where no educational provision as yet exists. The correlation between the more or less institutional nature of certain occupations and the training provided for them is examined in the Netherlands report and will be discussed later.

35. On the whole, the underlying tendency to prolong schooling and training may be regarded as a positive outcome of social and economic demand. Some of its consequences, though, are somewhat less reassuring. Of these the most obvious is the cost, which is liable to become increasingly burdensome in the present economic climate.

36. But attention must also be drawn to the risk of over-skilling, already mentioned in connection with France. Admittedly, unemployment rates are generally lower for those with higher levels of qualification, but it does not follow that an indefinite rise in these levels is in fact necessary, nor that this would eventually have the desired effects on the labour market. It suggests, rather, that when manpower is plentiful, employers are inclined to become ever more demanding, while young people are prompted to pursue education beyond what the kind of job they will subsequently be doing would normally require, in the hope that it will give them a better chance of securing employment and having a satisfactory career -- whence a queuing effect and a problem of over-skilling (and frustration) for some of the new generation. Conversely, there is the risk of a future shortage of manual and blue-collar workers.

## 4. The status of VOTEC and its relationship with general education

37. The relationship between VOTEC and general education raises three questions, at least:

- -- Is there something distinctive about VOTEC, in terms of structure and individual pathways, compared with general education?
- -- If so, what special goals explain this specific character? Are they purely vocational, or are they social too?
- -- Is the VOTEC option sufficiently enticing? At issue here is the parity of status and esteem which is a subject of concern and comment in several countries.

38. The first point to note is that the relationship between VOTEC and general education can raise a problem of delimitation and definition. In the

case of France this relationship is considered unclear. As far as their purpose is concerned, should the distinction be between streams, between disciplines, or between subject matters? In addition, the fact of having two streams, one "vocational", the other "technical", makes it harder to define a typology.

39. These distinctions may appear over-subtle to those who ask the much more challenging question: Is there a need for separate vocational education? Should not the national education system confine itself to providing a general education and leave vocational training to employers? Most European countries probably find this question misplaced, but it is often debated in connection with developing countries. Given their narrow labour markets and the cost involved, are they justified in establishing a VOTEC system? The question is also heard in the United States, where certain employers believe that the competitiveness of the economy depends primarily on the basic training of the labour force. On the other hand, it has been argued that some students need to learn in a hands-on environment and that vocational education should be preserved for that reason.

40. It is clearly a field where the differences between national systems are particularly great. Depending on whether a country's traditions are Anglo-Saxon, Germanic or other, the issues at stake are not at all the same. Even so, it would be fair to say that the sharp rise in student numbers has combined with demographic and socio-economic trends to pose the problem of the role and objectives of VOTEC in new terms. As already mentioned, many countries are concerned about the role of VOTEC in the democratisation of education and training.

41. In Italy, there is some feeling that the purpose of programmes for the young, especially in the southern provinces where there is still very high unemployment and not enough training, is actually social rather than economic. Yet responding to new economic needs is what most country reports indicate as a major objective in recent years, while conceding that such needs are very difficult to assess.

42. There has also been discussion, e.g. in Australia, of how far VOTEC's prime function should be to respond to economic needs or to the needs of the individual, to develop his potential and prepare him for an active and productive life. It is widely agreed nowadays that these two aspects are complementary, and there is a broader perception of the nature and role of VOTEC, including what it can contribute to a nation's well-being and to fostering citizenship.

43. The problems being faced in Finland are subjecting some of the principles previously underlying its education system to critical scrutiny. Education used to be guided by the State according to how government assessed requirements. But today, education and especially VOTEC are regarded more as a service on offer to the consumer in the market place. Whereas the aim of training had previously been to create equality of opportunity, which presupposed a unified system, today training institutions have to demonstrate that they are meeting a need and to attract a clientele. While expecting young

people themselves to take more initiative and responsibility in planning their educational career and preparing for employment, this new system may entail some risk of inequality in terms of opportunity and the value of qualifications.

44. The new problems raised by this type of individual choice set against a background of the operation of market forces, and highlighted in the Finland report, are akin to those already occurring in the English-speaking countries, such as the United States, and on the horizon for other OECD Member countries. At present, these countries are primarily concerned about the status of VOTEC vis-à-vis general education and how vocational streams can be made more attractive so as to avoid a shunning of manual skills and industrial training and too heavy an influx into higher education. Even so, one has to ask whether this strategy may not contribute in the longer term to a shortage of skilled manual and non-manual workers, insofar as the training for these is considered as only a stage on the path towards intermediate or higher qualifications.

45. The problem of VOTEC's status is raised in particular by the Scandinavian countries, by Australia and by France. Norway stresses the comprehensive principle, meaning that general and vocational education are dispensed under the same roof and all young people are guaranteed a chance to pursue post-secondary education. Sweden decided during the 1960s that vocational education should have the same status as general secondary education. This was to be achieved by merging the various kinds of education institutions and by increasing the general studies content in vocational streams.

46. In Japan, the United States-inspired education system introduced after the Second World War had broad-based objectives, as befitted the "comprehensive school" principle. General education assumed an increasingly academic character, however, as parents came to see it as the springboard to higher education, which now draws a large proportion of those leaving school with a qualification. The Minister of Education's intention of incorporating elements of vocational training and workplace experience into general education is having trouble taking hold, since pupils feel that it disrupts their preparations for university entrance.

47. Denmark's major reform of 1990 was part of a process intended to improve the status of industrial apprenticeship relative to school-based vocational training, so as to provide more young people with training of a high standard. From the mid-1960s the number of applicants for apprenticeships had been declining, mainly as the result of streaming at too early an age, which made it difficult to change direction later on. The competition between the form of vocational education defined in the legislation of 1977 and apprenticeship was considered undesirable. The greater emphasis placed on general education by the 1990 reform helped to make VOTEC more attractive by enabling students to switch tracks without having to start again from the beginning.

48. In Sweden the concern during the 1970s was that VOTEC should offer a valid alternative to general education. Since that time, the question of whether to maintain a distinct stream at secondary level was the subject of much discussion until it was finally decided by the new government that it should remain separate.

49. Italy has seen a somewhat similar trend in recent years within the State system of education, involving more emphasis on basic subjects and a reform of the content of vocational streams. As a result, these vocational streams are likely to be more attractive both to teachers and to students. They are considered as having a competitive edge not only over the courses offered by the regions, but also over technical and general streams. This raises the question, therefore, of how far it is justifiable to retain all three streams.

50. According to the report for Scotland, vocational education is less the watered down form of general education it used to be, but has developed policies and methods of its own. However, the Scotland report notes that VOTEC is not yet an attractive option. Young people are looking for a specific job, not a means of acquiring a skill and developing their personality. Employers, on the other hand, do not attach enough importance to qualifications and prefer "on-the-job" training. The Scotland report stresses the need to promote a positive image of VOTEC, saying that one way of doing so might be to demonstrate its impact on the quality of the manufacturing and service industries, thanks to a better skilled and motivated workforce.

51. In the United Kingdom, the White Paper on education and training in the twenty-first century states that the government hopes to remove the barriers standing in the way of equal status for the so-called "general" and "vocational" streams. This statement is of prime importance in the debate over parity of esteem. With the introduction of National Vocational Qualifications and General National Vocational Qualifications, there are now three streams (see below), all of which should provide access to higher education.

52. Other countries also mention the problem of making vocational training more attractive. In Australia, reports published as long ago as the late 1960s complained not only that technical education lacked prestige, but also that it was not perceived as a distinct stream with responsibilities of its own. Similar comments were made in Finland, where it proved difficult during the 1980s to attract students into fields of study of vital importance to the country's economy.

53. France offers a very telling example in this respect. "The vocational training system in France has always had two objectives: as a preparation for employment and as a means of continuing one's education". Some see vocational training as a way of "salvaging" underachievers in general education. For others, given the increase in post-compulsory enrolments, it is a way of relieving the pressure on the streams leading to higher education and of channelling underachievers into less skilled employment.

54. In France, VOTEC originally had some degree of independence within the education system, but has gradually been losing its separate identity. The tendency in many cases has been for occupationally oriented technical and vocational streams to be transformed into streams leading to further education. As a result, students are shunning the more specifically vocational, less prestigious upper-secondary streams in favour of more general programmesand higher levels.

55. In the United States the problem of VOTEC's status has also arisen, albeit in very different terms. The comprehensive schools, originally designed to maintain a balance between general education and vocational education, have gradually moved in the direction of separate streams, one leading on to higher education, another being a general stream and a third being a vocational stream. The segregation of teaching staff, students and finally subject matters has come about gradually of its own accord, in spite of the law-maker's intentions. Vocational education teachers have tended to sacrifice theoretical knowledge to narrow practical know-how. The 1963 Vocational Education Act emphasised social objectives and meeting the needs of the most disadvantaged. Following a critical assessment of the outcomes of this, the Carl D. Perkins Vocational Education Act of 1984 re-stated these priorities, while at the same time seeking to enhance vocational education's contribution to economic efficiency.

56. The institutional integration of technical and general education plainly does not prevent the emergence of de facto segregation when it comes to choosing between the various streams. Experience has been fairly similar in Iceland, where the principle is to combine general education with vocational education so far as possible within comprehensive schools, avoiding what might be streams that lead nowhere. But in Iceland too, this has not happened, as streams have tended to separate and rigidify, thus reducing the students' real freedom of choice.

57. On the whole, it would be fair to say that efforts to place VOTEC on an equal footing with general education have so far not been entirely successful. The growth of enrolment in VOTEC is not necessarily a proof of success. It may be the outcome of greater selectivity in general education streams, and thus a second choice for the individuals concerned. General education's higher prestige reflects what is a rational analysis by the younger generation of the mechanisms of the labour market, which means that the system of education cannot solve the problem by itself. Through their recruitment and career development strategies, employers themselves are helping to attract the young to general education. Parents, too, look for their children's success and social distinction via academic competition, thereby helping to perpetuate the tendency to differentiate streams hierarchically rather than functionally.

58. Within vocational education itself, some subjects are looked down upon. There are cases in France, and Japan, where the education authorities cannot find students to fill certain classes, even though employers report a need and offer job outlets, possibly on terms that are not sufficiently tempting. In situations of this kind, it is hardly fair to accuse the education system of failing to supply enough skilled labour.

***The status of apprenticeship***

59. In Germany, the function of apprenticeship has long been a subject of discussion, with the social partners often holding differing views. Although the need to prepare for working life is self-evident, since the late 1960s experts have recommended introducing the concept of "*berufliche Mündigkeit*"

(occupational citizenship) meaning the capacity to assume individual and collective responsibility in a work situation. This is one of the factors that have helped to broaden the perception of dual training, the predominance of which has prevented vocational training from being devalued vis-à-vis general secondary education.

60. In other countries, where apprenticeship does not occupy so privileged a position, the problem of its relationship to school-based education is even more acute, as has been the case in the Scandinavian countries, for example. This was the cause of a great deal of debate and controversy in Denmark during the 1970s and 1980s. It was feared that school-based education might be unable to attract young people from modest backgrounds to the same extent as apprenticeship, with its incentive of a wage packet. There was also some concern about the absence of a mechanism to ensure some sort of balance between the supply of places available at school and in industry, and the shortage of the latter. The difference between the school system and apprenticeship, in terms of the standard and content of their training, came under criticism.

61. But by the mid-1980s their content had become more comparable and industries of all kinds were showing interest in both systems of vocational training. Then the reform of 1990 resulted in the two systems being merged into one which it was hoped would be clearer, more coherent and more flexible. As training was broadened and since students were now allowed to go back on their initial choice, they have been less hesitant to enter vocational streams, which have seen an upturn in enrolment since the reform.

62. In Finland and France, for example, the two tracks continue to exist alongside one another. But at least in France, apprenticeship has so far been confined to the lower level diplomas, and to the least favoured streams and population groups. It remains to be seen what the effects will be of the decision to extend apprenticeship to all vocational diplomas, including those at post-secondary level, and the new government's intention to give more weight to apprenticeship.

***Labour market training and youth training schemes***

63. Non-formal types of training schemes forming part of employment policy (labour market training) constitute a special type of VOTEC. These have been developed to cope with the need for economic restructuring and rising unemployment. In many countries they are targeted mainly to the unemployed and adults requiring training for alternative employment. Here we shall be considering those schemes chiefly designed for young people with little training, who need help in gaining access to the labour market.

64. There can be no mistaking schemes of this type, since their aims and organisation are clearly distinct from from those of school-based and other formally "institutionalised" kinds of initial training. Their role may vary according to country, depending on the degree of youth unemployment and the capacity of initial training systems to accommodate (or not) large numbers of young people. There is a general and increasing tendency for these schemes to

provide skills training, although in countries where children remain in school until the age of 18, this is a secondary consideration. Austria reports, for example, that, while such programmes offer a second chance to people who have failed in an apprenticeship, their role is very minor, given the development of different formal types of vocational training.

65. In other countries, such as the United States, where drop-out rates are high, and especially in the United Kingdom, where post-compulsory enrolment is relatively low, some of these schemes have played an important part in the planning and organising of training for young people over 16. This may account for the somewhat piecemeal nature of certain reforms in these countries and for a tendency to organise post-compulsory training along lines which might seem more suitable for the training of adults.

66. Mention should also be made of the wide diversity of schemes which, in France and Italy for example, are designed mainly for young people who have received little training and aim to facilitate their entry into the labour market by giving them a work experience in a firm. The frontier between training, employment and social measures is not always clearly defined and these schemes are all the harder to analyse because they can evolve rapidly in response to labour market conditions and government policies.

67. What is apparent from all this is the wide variation in the types and objectives of VOTEC. Some are hard to distinguish from general education, while others are so close to employment that it can be difficult to draw the line between them and the situation of an employed or unemployed person. This differentiation has to be borne in mind when considering VOTEC as a whole. Analysts may come to completely different conclusions depending on whether they view VOTEC as a component of the education system or as specific programmes designed to remedy shortcomings in training and employment systems.

68. This diversity notwithstanding, many OECD Member countries are clearly faced with a dilemma as they try to skirt two opposite dangers. Either the VOTEC stream remains distinct from the general stream, with the risk of its becoming a "slow lane" leading to social relegation and segregation, reserved to those who are unable to do anything better; or the attempt to bring the two streams closer together robs VOTEC of its special character and leads to it being absorbed by general education.

69. Stated policies tend towards the second option, while doing their best to boost the image of the technical/vocational stream and preserve its distinctive character. The success of these policies hinges on more than the effectiveness of the education system, however; it depends just as much on the workings of the labour market. When interpreting the tendency for general education and VOTEC to move closer to one another, it should also be borne in mind that they are doing so mainly at the level of structures and institutions. The difficulties of aligning pedagogical approaches and objectives are perhaps more fundamental. We shall be returning to this aspect later.

## 5. Decentralisation: convergence or search for a new balance?

70. The division of powers as regards training policy and management poses two kinds of problem:

-- that of the decision-making level: what should be the respective roles of the State, of its constituent entities (provinces, regions, states), of local authorities and of training institutions?

-- that of the scope of this decision-making: does this cover training policy, programme content, funding, administration and management, including personnel management?

71. To both these aspects OECD Member countries have very different approaches, based on long-standing institutional structures. Some have a tradition of decentralisation and delegation of authority to the different levels of government (English-speaking countries) whereas in countries like France, powers are traditionally highly concentrated at central level. In others, such as Germany, this centralisation occurs to a differing extent at the regional level (*Länder*).

72. Most OECD Member countries have seen major changes over recent decades in the division of decision-making powers with regard to training. These changes can be accounted for in several ways. On the one hand, the desire to simplify and improve management by devolving greater responsibility to local authorities and institutions, and to bring training closer to the market and to the needs of local employers, has encouraged decentralisation. We shall be considering later on what this implies in terms of the employers' role. On the other hand, it is apparent that central authorities have wanted to be able to co-ordinate more closely the policies for training, employment and industrial development, which encourages a degree of re-centralisation.

### *Calling into question the tradition of centralisation*

73. For many years, France was a prime example of a country with a highly centralised training system in which the State played a key role. In 1982, however, France began to implement a policy of decentralisation. This involved a division of authority between the regions, responsible for funding investment in *lycée* buildings and equipment (including vocational *lycées*) and central government (the Ministry of Education) which retains sole responsibility for teaching content and for recruiting and managing the teaching staff.

74. Such an arrangement requires co-operation between the representatives of the Ministry (the Rectorats) and the regional authorities. This is effective to a varying degree from one region to another. Decisions to divide the different streams into sections are now largely outside the central authority's control and are mainly taken by the decentralised education authorities. The consequences of this reform in terms of the system's coherence and how well it matches economic requirements depend on what criteria the decentralised authority adopts. In principle, they aim to establish objective criteria based on meeting economic needs and rational management. But in some cases, local

pressures prompted by considerations of prestige can be decisive. The overall coherence of the planning can be affected, and the limitations of decentralisation become apparent.

75. The trend towards decentralisation can also be seen in other Latin countries, such as Spain and Italy, which have somewhat more experience of this than France. In Italy the provinces have enjoyed considerable independence since 1972 and 1978 in planning and implementing vocational training separate from that of the national education system and geared to local economic needs. Their freedom of action extends in particular to pedagogical approaches and organisation.

76. For some years there seems to have been a shift in the balance with the reform of state education. There is now less justification for the continued existence of those courses which the provinces used to offer, leading to qualifications of a fairly low level, while new forms of partnership are emerging: the secondary-leaving diploma can now be awarded jointly by the State school and by the provincial authorities.

77. Spain is in the process of implementing the 1990 reform which makes substantial provision for decentralisation. In different forms, the trend towards decentralisation can also be observed in Northern Europe: Norway has transferred resources from central government to its regional authorities, while the Netherlands is granting greater autonomy to its upper-secondary vocational schools (MBO), not only in the running of the schools but also in funding and personnel management.

78. In Finland, the 1970s saw the gradual establishment of a centralised system of control which was expected to facilitate balanced development across the country, but the predominant trend in the 1980s was towards decentralisation. Central government lays down broad guidelines and approximate quantitative targets, delegating other decisions to regional and local authorities. In accordance with the principles of a system of management by objectives, schools now receive a block grant reflecting several factors (size, types of course, student numbers), to use as they see fit. This is designed to enable them to respond more effectively to regional and local needs, and to lead to a training market that is influenced more by student demand than by the demands of the labour market. This decentralisation is also expected to help make more widespread the practice of schools being attached to municipal authorities.

79. Denmark's 1990 reform gives schools a wide measure of autonomy. They are free to decide on economic aspects as well as pedagogical aspects. Only guidelines and general aims are defined at central level, these being firstly the general training aims applying to all streams and all institutions, and secondly the more specific aims for the curriculum for each specialty. The schools, in conjunction with local partners and employers in particular, decide how to achieve these aims, especially in terms of detailed course content. Course content may therefore vary from one school to another, but the qualification awarded is recognised throughout the country.

80. The Danish reform also extends to funding arrangements, with a view to making training institutions more dynamic and more market-oriented. Each receives a block grant, based on enrolment and type of course. It can use this grant as it sees fit and seek additional funds in the form of private grants or by selling services.

81. One of the main features of Sweden's 1991 reform was a radical change in the division of responsibilities, now much more extensively devolved to the schools. In particular, the State will no longer be centrally determining course content for the various subjects. The State will be setting out only the general aims, key concepts and guidelines for the programme of instruction, leaving teachers to decide on content and methods. This means in particular that professional organisations will no longer have the same influence in these matters. It is accepted, though, that the State should be kept informed of how the schools are carrying out their responsibilities, so a central government body has been set up, the National Education Agency, to monitor and evaluate performances.

***Federal countries***

82. The pattern is different in federal countries (such as Australia, the United States, Canada and Switzerland) and in the United Kingdom, where there has always been a considerable degree of decentralisation.

83. In Switzerland the division of responsibility between the federal authority and the cantons is mentioned as being a problem, though not apparently a really major one, nor one that has changed fundamentally over the past few decades. As far as vocational education is concerned, the federal authority has powers to legislate and oversee, but the aim of this legislation is essentially to encourage the cantons to take action. The cantons draw up their own implementing legislation, and the administration and operation of the system are largely decentralised to canton and commune level, with the private sector playing a major role. Decentralisation is seen as a factor in promoting political and cultural identity, as well as flexibility, benefits which are thought to offset the disadvantages of having no central authority.

84. This seems to be a more serious issue in some other countries, such as Canada, where the question that is being asked is whether the main problem in education and training is the absence of a coherent national policy. Each province has developed its own training structures and institutions, funding them by grants and resources earmarked for priority and special needs. Each system is individual, but there are clear similarities and the differences reflect regional geographic, economic and cultural characteristics. The federal government, although it does not intervene directly, contributes funds chiefly to assist adjustment to the needs of the economy. Training increasingly is regarded as an integral part of the economic restructuring effort.

85. This is also the case in the United States, where the Constitution makes no provision for any federal powers with regard to education and where most states delegate responsibility for it to elected representatives in 15 000

local districts, so that it is hard to speak of a national VOTEC "system". But, ever since the Smith-Hughes Act of 1917, federal grants have been used as a means of developing and targeting vocational education. The target in this case has for a very long time been the underprivileged. Under the Carl D. Perkins Act of 1990, the Federal Congress sought more influence over quality, and therefore over structures and content. Congress is strengthening its role by directly awarding financial support to local authorities, thus by-passing state governments. Nevertheless, although the question of national certification standards is on the agenda (see below), nobody seems to be challenging the principle that a free enterprise system presupposes free agents and a minimum of control.

86. In Australia the federal authorities have been more active since the 1960s, mainly in funding and in programmes geared to the labour market. Within this broad trend, however, there have been fluctuations in line with changes on the political scene, especially during the 1970s. During the 1980s, the federal government's aim of re-structuring Australia's economy meant that VOTEC was given a fresh boost and assigned a larger role.

87. In the United Kingdom, attention has focused on making the many different programmes more coherent, especially those directly relating to employment (e.g. the Youth Training Scheme, New Job Training Scheme). Recently, in an effort to relate training more closely to the market and to local needs, employers have been assigned a greater role.

88. In 1974, a central co-ordinating and promotion body, the Manpower Services Commission, was created. In 1991, this was divided into two separate bodies, one for employment, the other for training. More recently, their powers have been split between the Department of Employment at central level and new local bodies, the Training and Enterprise Councils (TECs).

89. In Scotland, these local bodies are called Local Enterprise Companies (LECs), whose operations are co-ordinated by two national bodies, Scottish Enterprise and Highland and Island Enterprise. At school level, the Self-Governing Schools legislation of 1989 and 1990 greatly increased the independence of Further Education Colleges vis-à-vis the local authorities in regard to funding, personnel management and instruction. College boards were required to establish development plans, including for activities of a commercial character. But it was decided in 1991 to transfer the funding of further education to the central authorities (Scottish Office of the Education Department) with effect from 1993.

90. In 1989, Belgium became a federal country. As a result, responsibility for education was transferred to the three Communities. However, the ministries in each of the three have different powers. In the French-speaking community, the ministry still has an organisational responsibility for certain schools in addition to its powers of inspection, whereas the ministry in the Flemish community only has powers to inspect. Local councils have some degree of autonomy in managing schools and the funds made available to them. But Belgium is still in a transitional period and it is too early to draw any conclusions from its experience so far.

91. Any analysis of the institutional aspects would be incomplete without a mention of the private-sector training agencies, which are tending to take on an increasingly important role. The growing competition between public and private institutions in many countries, notably the English-speaking ones, is emphasised in particular in the Scotland report. This is tied in with the new market-oriented approaches and with the disengagement of central government, as we saw in the case of Finland. It is also mentioned by Canada and by Switzerland, whose federal legislation on training is based on the principle of incentives. Cantons draw up their own legislation and the federal authorities provide grants, but do not finance institutions directly. Under the Constitution, vocational training comes under economic affairs, not education, with the result that these federal grants are essentially destined for the private sector.

92. To sum up, the question that arises is how far OECD Member countries' policies really are converging. Convergence might be inferred from the move towards decentralisation in the more centralised countries, while the more decentralised countries are feeling the need for co-ordination and coherence. However, certain conflicting trends have been observed and substantial discrepancies remain, in methods of operation more than in the institutions.

93. The move towards decentralisation may be counterbalanced by more intensive supervision, or at least by the requirement that those in charge at the decentralised level should be accountable. As there is also a growing concern to improve quality, a number of countries are tending to take more interest in assessment, as we shall be seeing later. We shall wlso come back, in the conclusion, to the relationship between the problem of decentralization and the overall regulation of the training system.

## 6. The involvement of the social partners

94. A common feature in most countries, particularly since the 1980s, has been the effort to create closer links between education and the economy by involving the social partners to a greater extent. One aspect of this has been the concern to adapt VOTEC to present-day requirements and ensure that it makes a greater contribution to economic competitiveness.

95. The social partners may be involved not only in defining training objectives and programmes, but also in providing the training. Their involvement can take many forms:

- -- joint decision-making by government and employers' and employees' representatives at central level, as in the case of Germany's dual system;
- -- the formal consultation procedures, also at national level and involving the same partners, that have been or are being set up in many other countries, such as France and Belgium;
- -- closer relations at local level between training institutions and the social partners, employers in particular, which we shall be discussing in the next chapter;

-- the involvement of workers' representatives at company level in the training that these firms are providing.

96. In Germany and the Scandinavian countries, trade union and employer participation is a permanent feature, for reasons other than purely economic ones: it is also a tradition and a fundamental principle of harmonious industrial relations. Accordingly, the planning of courses in Germany's dual system has to be the outcome of a consensus between the partners following consultations co-ordinated by the Federal Institute of Vocational Training (BIBB). This desire to arrive at a consensus, however, does not prevent continuing discussion and diverging views on various aspects (as we have seen in connection with training objectives and content).

97. In Austria, the creation in 1969 of a joint National Vocational Training Council was a further stage in providing an institutional structure for the apprenticeship system. Chambers of commerce are responsible for managing the system in co-operation with organisations representing workers. In Canada, training institutions have established Advisory Committees to represent the views of local employers and local communities, which are participating increasingly actively in training initiatives.

98. In Denmark both vocational education, for which the Ministry of Education is responsible, and adult training programmes under the Ministry of Labour, are traditionally organised in close co-operation with employers and unions. Employers' and workers' organisations are also represented in all bodies which have a responsibility as regards training.

99. The recent reform has strengthened and formalised this approach by giving a key role to the Vocational Training Council, which makes recommendations to the Ministry on the location of institutions, training programmes, regulations regarding the status of students, etc. On the recommendation of the Council, the Ministry appoints committees for each of the eight to ten occupational fields. These committees put forward recommendations on entry requirements, training aims and content, and rules for examinations and apprenticeship contracts. Employers' organisations had already played an important part in preparing the reform, while the definition of streams and occupations was largely undertaken by the labour market agencies.

100. In Iceland, industry's role in training had long been a subject of discussion. The legislation of 1988 settled the matter by stipulating that the Industrial Training Board should cease to have direct responsibility (henceforth assigned to the Ministry of Education) and be limited to an advisory role. This suggests that the government felt the need to recover some of the responsibilities it had conceded to industry, which had not shown a great interest in developing vocational training Recent years, however, appear to have seen more intensive co-operation between the parties concerned with training.

101. In France, which has less of a tradition of co-operation between employers, unions and government, a procedure for such consultation was introduced during the post-war planning phase. Proposals for the creation, alteration or abolition of any kind of vocational training diploma have to be submitted to Vocational Consultative Commissions (*Commissions Professionnelles*

*Consultatives*, CPCs) on which employers' organisations, unions and the various agencies of the Ministry of Education are represented. However, "consultative" means something quite different from what it does in Germany, for instance, since the government retains sole power to decide. But the employers' organisations are increasingly making their presence felt and the government generally takes account of their suggestions and opinions. This system appears today to have settled down, but employers could well find themselves playing an even greater role in practice if the current upsurge in apprenticeship training were to continue.

102. Belgium set up a fairly similar arrangement in 1985 in the shape of a Higher Technical and Vocational Education Council to foster closer links with business and industry. In 1990, in the case of the Flemish community, it was incorporated into a Flemish Education Council which includes representatives of business and industry, and community organisations.

103. Employers play a still greater part, though a more recent one, in some of the English-speaking countries. In Scotland for example, as in the rest of the United Kingdom, they have become more directly involved in the design of training. Employers account for half of the members of college boards and have a growing influence on training. We shall be returning to this in the next chapter.

104. At the same time, establishments of secondary and higher education have been expanding their service-to-industry function via partnerships, consultancy services and short training courses. But this has not been done systematically and the possibilities are being discussed of improving such services, whether from the standpoint of analysing needs, developing flexible training modules, teaching methods, or assessment and certification.

105. The involvement of employers' organisations has increased markedly in the United Kingdom, as in several other English-speaking countries, with the introduction of National Vocational Qualifications (NVQs, or SVQs in Scotland). Although this scheme was designed by a national agency, the National Council for Vocational Qualifications in England and the Scottish Vocational Education Council in Scotland, its implementation has been almost entirely entrusted to "Industry Lead Bodies", which identifies the specific skills recognised by the National Council of Vocational Qualifications. This was the criticism levelled at the National Vocational Qualifications (NVQs). It was met by the inclusion of more general competences in the range of skills, i.e. the General National Vocational Qualifications (GNVQs) alongside the more specifically vocational competences (NVQs).

106. Although country reports are not always very specific on this point, it would appear that employers' and union representatives do not always play an equal part, except in Germany and the Scandinavian countries which have institutionalised parity in the co-determination process. Elsewhere, trade unions often play a smaller part than employers, perhaps because they have fewer resources to carry out research and participate more actively in the discussions. In some countries, however, workers' representatives are apparently no longer being invited to participate formally in the development and implementation of training.

107. The role of management and labour and other actors who influence the training system will be discussed further from a more general standpoint in the final section.

## 7. Industry's enhanced role in training

108. The participation of employers' representatives in fixing goals and, in some cases, training content does not necessarily mean that the enterprise is directly involved in training. But both are likely to expand for the same reasons. In fact, a certain degree of similarity is evident in the trends in Member countries as regards industry's enhanced role in training and the closer relationships that are being established between industry and the school. There may be several explanations for this trend, and its significance is not always the same.

109. First of all, there is the idea that closer involvement of industry in training may be a way of adapting more effectively to rapidly changing needs. Industry is seen as being able to provide a more precise indication of trends in the demand for skills, especially from the qualitative standpoint.

110. Another reason, mentioned in the reports for Canada and for Belgium's, Flemish community, is that the continuing sophistication and ever rising cost of equipment makes it impossible for schools to keep abreast and provide their students with a realistic work situation: hence the need to organise at least some periods of work experience in industry. Commenting on the fact that the sandwich course concept was introduced into secondary education only recently, it notes that the purpose was not so much to establish a closer link between education and employment for young people as a whole but to provide "a specific group of youngsters, those who were bored or disinclined to pursue ordinary education, with a necessary alternative once the school leaving age was raised".

111. The report for Belgium's Flemish community also mentions the difficulty schools have in recruiting and retaining practical instructors when their salaries cannot compete with those in industry. In Japan, although the government provides teachers in vocational fields with a special allowance, there is still a shortage of qualified trainers.

112. Indeed, the concern most often voiced is the educational value of alternate classroom/workplace training, although it is debatable whether the right conditions have yet been established for such co-operation between school and enterprise, between theory and practice, to be able to work properly.

113. Depending on what priorities are attached to these various aims, industry's role can vary considerably. Its role is a key one in the case of apprenticeship or the "dual" system of the German tradition. It can be a relatively secondary one whenever the bulk of the training is school-based. As we have seen, the two systems often exist alongside one another, though with a relative importance and a role that are still fundamentally different, in spite of a certain tendency for them to move closer to each other. Whenever the school-based system predominates, apprenticeship generally involves smaller

firms for the most part. Some of these may be more interested in training staff for their own specific needs, or simply in having some cheap labour temporarily at their disposal. When apprenticeship competes with school-based training, it tends to be more prevalent in certain sectors of activity where smaller firms predominate, as well as those types of practical skills that smaller firms are best placed to pass on. Such sectors include the food business, certain small-scale craft activities and, more particularly, the construction sector (which, for example, accounts for 80 per cent of apprentices in the United States).

114. The relationship between school and industry can take a wide variety of forms, from sandwich courses and traineeships to co-operation in various areas, e.g. teacher placements in industry and vice-versa, provision of equipment and also research conducted by schools on behalf of industry (all of these being forms of co-operation which were explicitly encouraged by measures adopted in France during the 1980s). The report from Belgium's Flemish community also mentions the importance of co-operation between schools and industry in finding jobs for the newly qualified. The report for Scotland underlines the part played by major firms in the development and promotion of VOTEC. Many such examples were mentioned in connection with the United States during the first VOTEC seminar in Phoenix on "Linkages in vocational-technical education and training" and at the second VOTEC seminar in Switzerland on "Technological innovation and economic change: Pedagogical and organisational implications for vocational and technical education and training".

115. The tendency for industry's role to increase may, nevertheless, encounter certain obstacles and limitations. We have already seen that in France, for example, reservations about the increasing role of industry (especially on the part of teachers) only began to subside during the 1980s.

116. One obvious limitation is industry's ability to accommodate trainees. This is already a problem in Denmark and even in Germany, with its well-entrenched tradition of alternating classroom and workplace training. It is naturally even more of a problem for countries where industry's involvement has had to be developed from scratch, as in Australia, for example, where there are doubts as to the capacity of ailing industries to accommodate trainees. One possible solution would be to assign training responsibilities not to any particular enterprise but to a sector of activity, which ought to be able to offer a wider and more varied range of training opportunities.

117. In Sweden, implementing the new reform has provoked detailed discussion about the scope for training in industry and the limitations on it. It is pointed out that organising alternating training requires a good deal of time, particularly on the part of teachers, who have to contact employers and arrange trainee placements. Employers may be reluctant to entrust inexperienced trainees with machinery which needs to be used at maximum capacity. In addition, firms do not always have qualified instructors and may find it difficult to release experienced workers to act in this capacity.

118. In fact, the problems are not only of a practical and organisational kid, but perhaps even more of a cultural character. The report for Sweden makes the point that school and workplace are two worlds which have to be

brought closer together, two worlds organised on different bases, with their own methods of operation, traditions and aims. The main difficulty encountered by a school governed by a curriculum, when it comes face-to-face with the world of work, is that the curriculum structures knowledge and determines the educational demands placed upon the school, whereas industry operates along quite different lines.

119. Sweden's answer to this is that the State will no longer determine training content centrally, but only the basic aims and concepts (as we shall see later in connection with curricula). When we look at this aspect in other countries, though, one thing that needs to be emphasised is the importance of the support and enthusiasm of those most closely affected by the success of such co-operation between school and industry. Attention has already been drawn to the criticism, in the case of Scotland, that certain employers have so far shown little interest in training. There are signs that the situation is changing, but it is considered that there is still a long way to go.

120. In other words, national tradition and culture play a great part in the success of co-operation between school and industry. Approaches that have proved successful in one country cannot necessarily be transposed to another. There may even be significant differences between different sectors of activity, and especially between larger and smaller enterprises. This point was well illustrated for example in Denmark, where small firms were hardly interested in more extensive training and the idea of a preparatory year, which did not seem to them to correspond to their needs.

***The role of the enterprise in the Germanic tradition***

121. It is those countries with a Germanic culture (Germany, Austria, Switzerland) that provide the best examples of a "dual" system where training is shared between school and industry. These three systems have in common the following features:

-- the organisation of the dual system and the roles of those concerned are deeply rooted in an historical tradition and in widespread allegiance to a system based, from the outset, on the responsibility of employers rather than the government;

-- the majority of an age group, including the less academically successful, participate in a form of vocational training that covers all trades and sectors of activity;

-- although apprentices are required to attend school part time until age 18, their status is that of wage-earners. The great strength of the dual system lies in the fact that it operates both as a system of training and as a system of employment;

-- the dual system is not a rigid one and has been much debated since it was modernised in the 1960s. Since then, however, reforms and changes have concerned mainly the occupational structure and training content rather than the institutions.

122. The fact that the social partners share responsibility for the industry-based training does not prevent differences of opinion and occasional conflict as to the ultimate purpose of the dual system. In particular, there is the opposition between a broad conception, favouring a kind of "vocational citizenship" and a more pragmatic conception of training for purely operational purposes. This conflict has some repercussions as regards training content, which we shall be considering later.

123. Another issue is funding: as the report for Germany shows, employers, in order to preserve their freedom of action, have always resisted attempts at state intervention or the imposition of a tax to ensure a fairer distribution of training costs between individual enterprises and sectors of activity.

124. Although the dual system still has the firm support of all concerned, its unique features and more particularly its dominant role seem nowadays somewhat threatened by a combination of factors:

-- the development of school-based vocational training, either as a preparatory year or as a supplementary full-time year, or as an alternative stream;

-- the increasing number of "inter-enterprise" training centres, which are at least partly replacing training with an individual employer in certain sectors. This is happening particularly in cases where smaller firms are unable to take on trainees. These centres also provide continuing training for adults;

-- the growing pressure in favour of a higher proportion of young people continuing their education. This has meant that these youngsters tend to enter apprenticeship after reaching a higher grade in general education and frequently resume their studies at the higher education level.

125. In Switzerland, the introduction of a vocational "maturity" qualification (*Berufsmatura*) is being considered as a way of responding to an economic demand for skills that are more theory-based, and a demand from young people for a form of vocational training leading on to higher education. Similarly, it is hoped in Austria that the introduction of Fachhochschulen will provide new opportunities for young people wishing to continue into higher education after an apprenticeship in the dual system. We shall be discussing all this in more detail in the section dealing with structural changes in education systems.

***The new role for industry in other countries***

126. In comparison with Germany, Austria and Switzerland, where the situation is fairly similar and the systems well-entrenched, the picture in the Scandinavian countries is somewhat different.

127. As mentioned earlier, Denmark in 1989 took steps to integrate school-based vocational training with apprenticeship by introducing a "dual system". This, in contrast to the previous apprenticeship system, places more emphasis on theoretical training at college, with 60 weeks of this, of which 40 are during the student's first basic or orientation year. Following this, students are expected to obtain an apprenticeship contract. This basic training at college, organised in units of several weeks, is intended to make it easier for the student eventually to resume his studies. It is emphasised that periods of theoretical training and periods of practical apprenticeship should be complementary.

128. In Sweden, since the mid-1980s, there has been much discussion of the possibility of developing training at the workplace, the linkage between practical training at school and in industry, the monitoring of the quality of training in industry, and standards of instruction during work experience. Under the terms of the major reform introduced in 1991, training is to be based on co-operation between school and industry, with 15 per cent of it being provided at the workplace. However, it is the local authorities that are responsible for implementing these policies. In parallel, the reform provides for apprenticeship under the joint responsibility of school and enterprise. This seems therefore to be a trend in the opposite direction to that in Denmark.

129. But it is not very different from what is happening in France. In France, however, direct participation by enterprises in training, other than in the case of apprentices, was not very noticeable until a socialist government took office in the early 1980s. As mentioned earlier, these changed circumstances dispelled the misgivings of teachers and trade unions about industry's role in training.

130. The practical outcome of this has been a series of initiatives, such as the organisation of short periods of instruction in industry, followed by a policy favouring the idea of alternating training, which resulted in the systematic inclusion of work experience in the most recent training courses such as the vocational baccalaureate (*Baccalauréat professionnel*), and the decision that young people should be allowed, and encouraged, to use apprenticeship as their way of preparing for all vocational training qualifications, including those at post-secondary level. Enterprises and training establishments have been encouraged to enter into co-operation agreements to exchange services (instructors, equipment, research work, trainee placements).

131. However, the gap between mainly school-based and mainly enterprise-based, apprenticeship-style alternating training remains wide. While mainly school-based training has achieved a degree of success, especially among students, the report for France does mention a tendency towards rigidity in two respects: administratively, as regards methods of organisation and schedules, and pedagogically, with the risk of a transposition of the school model into industry. The report mentions a certain overall tendency towards to what it calls "academic overkill". Conversely, it notes a tendency for industry to become increasingly assertive, in order to exert more influence on training content and trainee selection.

132. Many other countries explicitly mention a growing trend towards co-operation between school and industry. In Italy such co-operation is still at the experimental stage. In the United States, the strengthening of relations between school and industry is one of the three policy aims of the 1990 Perkins II Act. It takes the form of a range of partnership programmes, co-operative education, work experience and apprenticeship.

***Preparation for employment and relationship with the labour market***

133. As seen above, in Japan, efforts have been made to introduce workplace experience into general education but with mixed results. It is noteworthy that this country's report is one of the few to make specific mention of the links between school and the labour market. It highlights a unique feature of the Japanese system: in contrast with western countries where students generally seek employment at the end of their studies, it is the schools that introduce students to employers. Under this practice, which is institutionalised by labour legislation, employers generally recruit young people according to their ability to undergo complementary training. This ability, which is related to the very high percentage of students who finish secondary school and therefore have a good education level, is highly valued by employers.

134. In the United States, strengthening the school-to-work transition process constitutes one of the three pillars of the 1990 Perkins II Act. Two themes are the subject of debate in this respect. First, it is felt that the proficiency of those leaving general education is insufficient in core subjects. It has been suggested that the tradition of doing paid work on the side might be responsible for students' school work suffering. Another approach would be to give a more educational slant to the odd jobs which most students view simply as a means of earning spending money. There is also an interest in programmes that improve social mobility for the most disadvantaged groups.

**8. VOTEC structures and content: flexibility, adaptability, breadth**

135. VOTEC systems in OECD Member countries face radical change, not only in response to rapid changes in the economy and skill requirements, but also more broadly as societies and attitudes evolve, implying greater diversity and individual freedom, and greater regard for specifically local conditions.

136. In theory, we should be able to distinguish between responsiveness in terms of structures and responsiveness in terms of training programmes. In fact, the two are linked, because greater flexibility cannot be introduced into training content or pathways (a major aim) while structures are kept rigid.

137. Yet VOTEC structures, the product of a long history, remain very different from one country to another and it would be unrealistic to set out to describe them here, especially since in predominantly decentralised countries these structures can differ within one and the same country: in the United States, for example, the duration of compulsory schooling and the start of upper-secondary (high school) education vary from state to state. No

qualifications are nationally recognised and content has long been left largely to the discretion of teachers, who have tended to favour specific skills at the expense of general education. As another example, in Germany the part of training which schools deliver is the responsibility of the *Länder*. The *Länder* decide how education should be organised and its content (regularly consulting one another) and their training system is still somewhat sui genres.

138. In the circumstances it is harder to identify clear trends in OECD Member countries for structures than it is for content.

***Adapting to new requirements***

139. The need for new skills stems, as we have said, from technological and economic development, and means that VOTEC must adapt. It is sometimes accused of being slow to do so, but this criticism is not necessarily justified, since the delay may be due to the consultation process, and the more intensive that is the more time it demands. Because of uncertainty as to the exact nature of these changes and the unreliability of forecasts, such adaptation tends to be more qualitative than quantitative.

140. In the United States, VOTEC is reported to be under increasing pressure to provide vocational training that matches present and foreseeable manpower needs. In many other countries, such as Germany and Canada, responsiveness to economic needs is a prime concern in the updating of curricula.

141. In the United Kingdom, Australia, Canada and New Zealand, an important aim is to define training objectives and standards in accordance with the skills required to qualify for a particular job. This is the purpose of the National Vocational Qualifications already referred to and to which we shall be returning.

142. Those who speak of the need to make VOTEC responsive are usually thinking primarily of adapting to technological change which, perhaps significantly, the various reports do not particularly stress. No doubt because this is not the most difficult task, since what it mainly involves is technical modifications to programme content. The other aspects of this adaptation mentioned below are probably more fundamental and therefore harder to implement.

***Diversifying vocational training at secondary level and extending it to post-secondary level***

143. One obvious answer to the needs of the economy is to raise the standard of training, not only to meet the demand for more advanced skills from employers but also to satisfy the social demand for longer schooling.

144. So it is easy to account for the trend observed in several countries, such as Denmark, the United States and France, to develop technical and vocational training at post-secondary level. This move, in a response to a modern economy's need for technicians, raises the problem of how to link VOTEC at the secondary and higher education levels.

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145. In the United States, "Tech Prep" training provides an alternative to conventional post-secondary college education and a link between secondary and post-secondary levels. It consists of two years' technical education at the end of secondary schooling (11th and 12th grades) followed by two years at post-secondary level. It is therefore a preparation either for employment as a highly skilled technician or for going on to higher education. The notion of linkage between programme and course elements is acknowledged as being essential, but this is not always well understood by training establishments. Similarly, many of them do not take into account federal regulations according to which these programmes should focus more on students "at risk". Although no overall asessment has yet been made regarding their implementation, which is very uneven in different cases, initial results are considered encouraging and significant progess has been observed in the area of teaching content and organisation.

146. This is not very different from the system operating in France since the 1960s, consisting of three years' technical training at the end of secondary education, usually leading on to post-secondary training as a senior technician in the form of a two-year programme either at a *lycée* or at one of the university institutes of technology.

147. In Belgium's Flemish community there was virtually no post-secondary vocational training available until the early 1980s. Since then, secondary vocational education has been developed to offer courses of six or even seven years in technical options.

148. In Italy, short post-secondary training courses are being tried out, some in State schools, others in regions, such as Lombardy, which are looking for a way of integrating secondary school with vocational training and the world of work. In Japan, approximately 17 per cent of those leaving upper secondary education continue their studies in advanced vocational schools.

149. In parallel with these technician programmes straddling upper-secondary and post-secondary education, countries like France, Germany, Switzerland and Austria are currently developing programmes leading to a "vocational baccalaureate" (*Baccalauréat professionnel, Berufsmatura, Berufsabitur*) combining a recognised vocational qualification with access to higher education.

150. These are only a few examples. Such developments can be expected to continue and to be introduced more widely. It also seems likely that the upper-secondary level and the first two years at post-secondary level will increasingly constitute a key phase in training systems. These developments have been interpreted as the emergence of alternative pathways to higher education. But today they can also be regarded as heralding a more sweeping revision of post-compulsory pathways in general, calling into question the segmentation, complementarity and the traditional interfaces of the different kinds of initial training at secondary and higher level, as well as the ways in which they relate to continuing education and training.

***Flexibility and modularity***

151. As can be seen from most of the reports, flexibility is today the keyword in training, as it is in the economy. This is easily understandable in view of the fact that in an uncertain, constantly changing world, where forecasts are unreliable, responsiveness constitutes the best strategy for training. This flexibility, perhaps more explicitly in some cases than in others, is intended both to facilitate responsiveness to new economic needs and to satisfy a social demand for diversity and for more easy access, thereby enabling the student to switch direction (as mentioned by Sweden for example). By satisfying this demand it is hoped to make VOTEC streams more attractive and in this way deal with the problem mentioned above of parity between vocational training and general education.

152. So broad a conception of flexibility, and of the justification for it, may explain why so many ways are sought of implementing it in practice: flexibility can apply to the structures as well as to the organisation of training streams, to the diversity of pathways, to programme content and to certification procedures.

153. This trend is illustrated by Australia, whose new system currently under test offers a wide range of training pathways combining education, training and work experience in different ways. These pathways can now be followed in schools as well as in further education colleges, private institutions, training centres, community establishments and with employers. Certification may be acquired in the form of credits or units that are transferable and recognised at the national level.

154. Flexibility, as we have seen, was one of the aims of the 1990 reform in Denmark. One form it takes is to allow students the option of starting to train as an apprentice in industry and then returning to school, or vice versa. Sweden also stresses flexibility and responsiveness to individual needs which cannot be catered for by the national curricula.

155. In France, where flexibility is much less entrenched as a tradition, it was also among the aims in establishing locally run further-training courses and in extending apprenticeship so that the same diplomas can be prepared either at school, in industry, or in Chamber of Commerce training institutions. Diversification is being sought by introducing new streams, such as the vocational Baccalauréat, which enables students to continue vocational training after the first diploma. These streams were introduced in order to meet demands for responsiveness to changes in the pattern of work and in technologies. France has also experimented, especially in the case of continuing training, with a system of course credits which enables the student to advance gradually at his own pace.

156. The United Kingdom is also trying to achieve a high degree of flexibility. In this connection, the Scotland report, for example, emphasises mutual recognition of national qualifications and Scottish qualifications (SVQs) which can be obtained by different means (open learning, for instance) and in different institutions (industry, private institutions, schools, community education centres). The United Kingdom and more particularly

Scotland have gone a very long way in this direction by adopting the general principle of modular training in connection with the introduction of National Vocational Qualifications. With all of the different possible combinations of modules that are available, a maximum of flexibility should be achievable. As mentioned earlier, the intention is that general education modules should be combined with specific vocational competence modules. The new programmes in Canada and the reform under way in Australia also adopt a modular approach, as does Italy's system where it was developed jointly by teachers, universities and central government.

157. Lastly, attention should be drawn to a novel experiment currently being conducted in Finland. This consists in establishing partnerships between general and vocational education institutions so as to enable students to take certain courses in a second institution and to choose a wider ranges of subjects and streams. More subjects are optional. The only compulsory common-core subjects are the national languages, one foreign language and mathematics. The general idea is to broaden the scope of training and maximise its flexibility and adaptability. Subject matters are designed on a modular basis. Courses may be taken horizontally in different streams and vertically at several levels. In this way, initiative and responsibility for constructing individual pathways are left largely with the young people themselves and their parents.

***Broadening the content***

158. Whatever the training system, a significant and virtually universal trend is the broadening of the content of training. This stems both from the thinking and views as regards the educational function of VOTEC and from the realisation that it is no longer possible to train an individual for a specific job, he has to be trained for a largely unpredictable pattern of economic development. Furthermore, new forms of work demand a broader understanding of the workplace environment, not just specific know-how.

159. Denmark affords a recent example of wholesale reform of training structures and content. The object of the reform is to broaden the students' basic knowledge, as a foundation for their vocational training, and to make their skills more readily transferable. This basic education comprises the national language, at least one foreign language, mathematics, elementary computing, management and social sciences. The introduction of a preparatory year, as a period of transition or orientation, has helped to make this pattern of education possible.

160. The training provided within each stream is both theoretical and practical. The theory concerns knowledge of the relevant materials, tools, methods and procedures for each stream. The emphasis is on combining theoretical training with practical training in the workplace. The training is also intended to develop personal qualities (ability to learn, to co-operate, to apply an analytical approach, independence, creativity, self-confidence) and understanding of the social environment.

161. The emphasis on strengthening generic or basic competences such as the ability to solve problems is also illustrated by the development of "key skills" (*Schlüsselqualifikationen*) in Germany and of "basic skills" in Canada.

162. Similarly, reports produced in Australia round about 1990 stressed the need to improve knowledge of the language and to develop self-expression, both to meet the economic need for better communication within a labour force comprising a growing proportion of immigrants and, more broadly, as a means of improving productivity, safety and economic efficiency, and from the standpoint of social and national identity.

163. These reports also pointed to the growing convergence of general and vocational education and the compatibility between strengthening basic training and the pursuit of vocational aims. Hence the concept of employment-related key competences, of which seven were identified: language and communication, mathematics, understanding of science and technology, cultural understanding, problem solving, and personal and interpersonal characteristics.

164. A general framework has been produced to define these competences at different levels. This should make it possible to link education, vocational training and the world of work, and also provide employers with new means for making known their requirements as regards the students and the training system. The report for Australia states that it should be possible to develop these key competences within existing institutions and training programmes.

165. In Italy, the reform of public education streams for those aged 14-16 included the introduction of a common core of general subjects, involving a strengthening of language and communications skills in the vocational stream, courses in basic computer skills and mathematics, and support facilities for the weaker students. At the same time, emphasis is placed on problem solving and the practical applications of training. In Iceland as well, reforms introduced in the mid-1960s were based on the idea that an essential condition to economic development was the creation of a year of basic training to precede more practical, specialized training.

166. In the United Kingdom, a national curriculum has bee implemented which determines what students are to know, understand and be capable of doing at each level of education from ages 5 to 16. This education must provide a solid basis in preparation for employment as well as further studies. It consists of ten subjects. In Scotland in particular, there is a consensus between representatives of government, industry and education that students acquire a sufficient level in language skills, calculating, problem solving and information technologies.

167. In Japan, during the 1970s and 1980s, the Ministry of Education systematised to some extent the curricula of its special (vocational) schools. In 1978, common core subjects were introduced into programmes and in 1989 subjects such as problem solving appeared. At the same time, the number of subjects was decreased in 1960 and again in 1978 to reduce specialisation. To cope with the rapid evolution of knowledge and technology, it was considered essential to ensure that knowledge and skills acquired were transferable.

168. The report of this country notes that education policy stresses general education and that the share of general subject matter in vocational education is higher in Japan than it is in Europe. As a result, the level reached at the upper secondary level, notably in mathematics, is higher than elsewhere. Thanks to this system, students seem better prepared for subsequent vocational training, even after they have taken up work.

169. In the United States, the reports of the 1980s and the Perkins II Act of 1990 severely criticise the inadequate standard of training of the labour force, especially in academic skills, in the light of new requirements. They recommend integrating general training more closely with vocational training by placing more emphasis on general subjects, which could represent a marked shift in the traditional approach to vocational training in that country.

170. Attention should be drawn, though, to certain divergences both within and among countries as regards the meaning of "basic skills" or "key skills". Some see these as components of general culture, while others view them as factors enhancing a person's technological expertise, for example through a capacity for abstract reasoning. These different standpoints may help to explain why different countries and different actors attach more or less importance to the convergence of general education and vocational training or, conversely, to the continued coexistence of two separate post-compulsory streams.

***Less specialisation***

171. Coupled with the broadening of training to embrace basic knowledge and skills is a very clear tendency to reduce the degree of specialisation in vocational training. There are many reasons for this. On the labour market side, new patterns of organisation call for a greater range of skills and a more mobile, adaptable workforce, so that it is no longer realistic to train young people for highly specialist jobs.

172. From the training system's standpoint, it is also clearly preferable to reduce specialisation or at least to delay it, partly for educational and organisational reasons, but also to enable young trainees facing an uncertain future to postpone their career decisions for as long as possible. As the report for Sweden points out, a high degree of specialisation can mean smaller classes and is expensive. It also creates serious difficulties when the clientele is too small and when students may have to be forced into career decisions just to fill the classes.

173. Together with the introduction of a preparatory transition year, the reduction of specialisation and its more gradual phasing-in are also features of the 1991 reform in Denmark, where the number of specialties has been cut from 300 to 80.

174. The same trend has been noted in Germany, where the number of recognised specialties in the dual system has fallen from some 900 in 1945 to 627 in 1970 and 377 in 1990. The principle is now gradual specialisation, e.g. in

engineering, where a first, common-core year is followed by an initial degree of specialisation during the second year and more intensive specialisation in the last year of apprenticeship.

175. Similarly in France where, in the case of its Certificate of vocational competence (*Certificat d'aptitude professionnelle*, CAP), the conventional first-level preparation for specific trades, the number of occupational categories has been reduced from 317 in 1983 to 243 in 1991, while for the newer and broader Certificate of vocational studies (*brevet d'études professionnelles*, BEP) the number of occupational categories has shrunk from 75 to 51.

176. The same is true for Finland, where the 1978 reform consolidated 600 training streams into 25 basic groups, consisting of 200 streams in total. In Sweden too, the number of streams on entry to vocational education has been sharply reduced from 130 to 14.

177. The trend is certainly undeniable but it has nonetheless not put an end to the debate or the conflict between advocates of specialisation and those favouring a broader range of skills. The argument for specialisation is that a job applicant will find employment more readily if his skills are operational. Indeed, certain employers' associations will often be found clamouring for even more diplomas corresponding specifically to their economic activity, with a view to creating greater awareness of it and strengthening its image. This, however, creates serious administrative problems for the education authorities, who can point to the benefits of broad-based training from the standpoint of the flexibility and future adaptability of the labour force.

178. The report for Sweden also notes, as other countries could, that attitudes differ even among each of the parties concerned: larger enterprises tend to favour a broad range of skills since they prefer to manage and mould their own workforce and are in a position to provide further training. Smaller enterprises, on the other hand, tend to expect to be provided with workers who are immediately operational in a particular job -- whence a certain amount of resistance to reducing the number of streams, which will sometimes surface in France, too, for the reasons mentioned above.

***Effects as regards the teaching approach and the organisation of training***

179. In certain countries, changes in the structure and content of training have gone hand in hand with a new concept as regards the teaching approach and the organisation of training. This applies, as we have seen, to Finland, where several institutions combine to offer joint courses. It also applies particularly to Sweden, where the introduction of common-core courses should make for more effective use of teachers, premises and equipment. This means that it should then be possible to organise training in terms of the institution and not of the class, that the equipment can be better utilised and thus more frequently renewed. Although the reports do not cover this issue as such, it would be worthwhile analysing in more detail the way theoretical and practical training are combined.

## 9. The expansion of continuing training and the effect on initial VOTEC

180. The main reason for the expansion of continuing training is the need to adapt manpower to rapidly evolving functions and skill requirements. This process of adaptation cannot await the entry of new, better-trained generations into the labour market, especially since recent demographic trends in most OECD Member countries mean that these new generations will be smaller in number.

181. Another reason for the growth of continuing training is rising unemployment, which poses problems of finding jobs for the young as well as problems of redeploying adult workers whose experience no longer corresponds to the needs of their local labour market. So there are at least three kinds of continuing training, each with own specific aims: labour market training for the young, further training for adults already in employment, and redeployment training.

182. The upsurge in interest in continuing training can be assigned a precise date in the case of France, where an Act of 1971 provided both for a funding scheme (a contribution from enterprises representing a percentage of the wage bill) and a system for utilising these resources. One particular feature of this is that it is to a large extent based on joint management by all of the social partners, in addition to which it allows public-sector vocational training institutions to offer their services and compete on the market for training. The Act has certainly contributed to a significant growth in training activities, not only within these public-sector institutions but also within a fast-expanding private sector and in enterprises themselves. Twenty years later, an evaluation of the scheme resulted in its being extended to smaller enterprises (which had not been concerned at the outset) and in its being made more flexible.

183. Similarly, in Japan, the occupational skills promotion Act was amended in 1992 to place more emphasis on continuing training and retraining. Faced with rapid changes in their skill needs, employers themselves took on the main responsibility for this task.

184. Meanwhile, rising unemployment during the 1980s, especially among the young, brought about a substantial growth of programmes aimed particularly at the 16-25 age-group, providing incentives for hiring as well as training these youngsters. Many such programmes had to start with some remedial general education and deal with the attitudinal problems of the more disadvantaged among them who had been excluded from the education system at a very early age and subsequently from the labour market, and perhaps even from society in general. Thereafter, most of the emphasis is on job training.

185. The report for Germany notes that since the 1960s there have been greater efforts to link initial training more closely with continuing training. Legislation in 1969 provided an institutional framework for continuing training, which has expanded substantially over the last 20 years.

186. In the United Kingdom, high unemployment together with a growing awareness that much of the labour force was inadequately trained prompted the government to introduce several major programmes. In 1978, the Youth Opportunity Programme served as a framework for various schemes providing work

experience and job training for the young unemployed. The Youth Training Scheme launched in 1983 was extended in 1986 to all young people, not just the unemployed, the aim being to equip them with a skill. A range of schemes for adults was developed alongside these programmes for the young. One could cite many other examples of programmes like these which, in the case of young people, raise the question of the school's responsibility and the inadequacy of initial education and training.

187. Although there has been a definite and widespread growth of continuing training, this nonetheless raises a number of questions. First, the difficulty of measuring it and assessing its impact and its cost, bearing in mind the variety of forms it can take and the narrow divide between training, reskilling, and help and advice to workers. What do a few hours of on-the-job "show-how" from a supervisor have in common with a long course leading to redeployment or to a university degree?

188. According to the report for Belgium's Flemish community, the proliferation of out-of-school adult training courses may be looked at askance by the teaching profession, who see this as a form of competition. This issue is linked with that of the status of continuing training as opposed to initial training. How to define continuing training, how to calculate its importance, how to take into account what its recipient has learned are just a few of the problems raised by the growth of continuing training. They are not the only ones, and it is not at all certain that national reports give enough consideration to the consequences of widescale expansion of further training, a subject which has been under discussion for many years now and about which a great deal has been written. What are attitudes towards re-entry into education after the first few years of working life? Towards the use of initial training resources for continuing training?

189. The situation in some countries notwithstanding, the impression one gets is that there is still an appreciable discrepancy in this area between intentions and concrete action. In France, for example, schools were given the opportunity, thanks to greater flexibility in their operating methods, to associate in providing competitive training on the new market of continuing training. But this flexibility and the modernisation of teaching techniques that went with it do not seem to have had the desired effect on initial training, and the two systems have remained largely isolated from one another. More generally, the initial concept of permanent training has gradually given way to the more restrictive notion of continuing training. For its part, the Japanese report, referring to the need to improve continuing training, notes that it should make better use of school resources.

190. The transformation of systems of education and training as a result of the widespread availability of continuing training has only just begun. The transformation can be expected to affect higher education in particular which, to a greater extent than secondary education, will be confronted with the problem of what properly comes within the purview of initial training and what comes within that of continuing training.

## 10. Quality, evaluation and accreditation of qualifications

191. These issues are connected, insofar as the concern for raising the quality of training requires that means be provided to assess it, certification being considered as one kind of assessment. The question is urgent, given, on the one hand, the trend towards decentralisation and greater independence for learning institutions and, on the other hand, the concern to better co-ordinate training with labour market needs.

### *Concern for quality implies the need for evaluation*

192. The rapid rise in the number of children staying on at school and, in particular, the growing numbers in VOTEC pose the problem of quality. In many countries, a recurrent subject of discussions is the question of whether this quantitative growth is at the expense of quality. But the problem is also one for employers, since it is bound up with the new emphasis on product quality and new forms of organisation whereby the workers are made responsible for quality. Quality is a prerequisite if VOTEC is to be valued and to acquire parity of prestige with general education.

193. But what is quality? The report for Scotland suggests two answers: for employers and higher education, quality means acquiring a qualification. Within the education system, quality means the level of student achievement or "value added". The report notes the development of a quality culture and the progress made in the various fields determining quality: institutional management, making their funding conditional on quality criteria, curricula and teaching methods, teacher qualifications.

194. One way of measuring quality is to develop performance indicators for students and institutions in conjunction with the OECD activities in this area. This has been done in Finland and France, for example, and to an even greater extent in the English-speaking countries. In the United States, where the funding of federal programmes has always involved some form of assessment, it is hoped to go much further in assessing student outcomes as a way of measuring the effectiveness of programmes. Congress has asked the states to introduce yardsticks for measuring school outcomes, competences acquired and students' subsequent achievements.

195. In Scotland, a 1990 report suggested using performance indicators to assess the effectiveness of Further Education Colleges. This would be a way of measuring the impact of reforms, showing decision makers what methods were most effective and explaining trends. Using indicators should help to underline educators' responsibility in defining standards for training, and creating and developing standards that are more closely attuned to the needs of the labour market and defined in consultation with employers.

196. Other English-speaking countries have adopted similar approaches. It is certainly no coincidence that these countries, with their tradition of decentralisation, are also concerned with the problems of evaluation and certification. Once quality has been defined, the next question is how to evaluate it and certification is one way of doing this.

197. Finland provides an example of a comprehensive approach to these problems. Following the radical reforms mentioned earlier, Finland is nowadays more concerned with managing its training system on the basis of its performance and a cost/benefit analysis, paying new attention to concepts of efficiency and effectiveness. Finland is only now beginning to concern itself with the certification of vocational training at secondary level, which has never hitherto been the practice.

***The diversity of certification systems***

198. Certification issues were the theme of the third VOTEC seminar in Porto in October 1992. It showed that procedures for certifying and accrediting vocational skills and competences reflect, to a large extent, the diversity of training systems. A centralised, predominantly public system generally has country-wide accreditation. But recognition on the labour market does not automatically follow from that if schools are providing all the training without any industry involvement (the case of France, for example).

199. In Japan, the centralised nature of the education system does not necessarily imply a comprehensive and methodical stucture of certification. There is a wide variety of certificates, administered by 19 different government ministries. Efforts are being made to resolve this problem, by diversifying and making more flexible the mechanism for recognition of credits, and more generally, by expanding co-operation between schools.

200. The labour market recognises qualifications under the Germanic countries' dual system far more automatically, not so much because of their single certification system as because of mutual confidence among employers and trainers in jointly agreed curricula and methods of instruction, firmly based on the identification of all concerned with "their" training system.

201. There remains a third case, that of the English-speaking countries, whose high degree of decentralisation had until recently precluded any country-wide certification, in relation to either the training system or the labour market. The report on the United States summed up the situation by stressing that vocational and technical education does not have standards for skills training, has not succeeded in developing a common and coherent programme and is incapable of assessing in a systematic manner the performance of those who have taken this type of education.

202. It was in order both to fill that gap, making certification clearer, more coherent and comprehensible, and to gear training more closely to industry's actual needs, that the United Kingdom was the first to introduce a system of competence-based National Vocational Qualifications system (NVQs). This sets out in detail, for all sectors, the skills required for a particular occupation and specifies performance levels to be attained step by step in a sequence of modules. The system, which is intended for use mainly in further training for adults, with the idea of encouraging employers and workers to support continuing training, has much wider relevance and it is expanding to include initial training.

203. To a varying extent, Australia, Canada, and New Zealand are moving in the same direction. They too are anxious to introduce ways of assessing the quality of training and measuring outcomes. The Netherlands is also interested in doing this. Under discussion are the levels of knowledge and overall comprehension that should be required alongside the demonstration of practical know-how, the merits of a modular as opposed to a more integrated approach to the pedagogical process and its suitability for the training of young people as well as adults. The success of this approach, like the success of any certification system at the interface between education and employment, will depend partly on employers, as the report for Scotland points out. Will employers play their part in the training system and try to promote it? Will they recognise skills even if there is some risk that competitors will poach their skilled staff? Might it lead to disputes over working conditions and pay scales?

204. This competence-based approach entails taking into account skills acquired at the workplace and not merely those learned in school. This is consistent with the greater role which, as we have seen, continuing training is today being called upon to play. It also reflects a concern for the democratisation of education and the attempt to integrate immigrant students and workers. Its justification may be more doubtful, though, in initial training, where short-term objectives and segmented modules might conflict with the concept of broad-based training, with the result that young people could enter the labour market with an inadequate and overly narrow range of skills.

205. In this connection it is noteworthy that, although the first attempts to devise skill accreditation systems were in North America, other countries have also been trying to do this, though not in the same ways. In Germany, for example, emphasis has been on tightening the regulations governing the certification of further training, especially those regarding the Meister qualification for those with responsibility for training apprentices in industry. Accreditation systems have been under discussion and study in countries as varied as France, New Zealand and the Netherlands. They raise at least three questions: *a)* could the systems tried out in North America, requiring detailed examination of each individual case, be applied on a wide scale? *b)* can the same approach be valid for academic recognition for the purpose of resuming one's studies and recognition of vocational qualifications governing labour market classifications and pay scales? *c)* should an individualised approach to qualifications play the same role in countries with well-established collective bargaining systems as in others?

206. Diversity in training systems and patterns of industrial relations raises an especially difficult problem in the EC countries, where this must not be allowed to undermine the principle of freedom of movement for workers. As regards the regulated professions (which can only be practised by those acquiring the requisite qualification) EC directives first of all established the principle of mutual recognition for a certain number of them. While the necessary work was being done to implement this, the EC in the meantime issued general directives recommending such recognition for all post-secondary courses of three years duration (in 1988) and for those of one year duration (in 1992). At the same time, efforts were being made to facilitate the comparison of qualifications for the non-recognised professions. Difficulties arise in comparing work content, and especially in comparing the nature of the training and industrial relations involved.

## II. Developments in Certain Sectors

207. The preceding review was necessarily fairly general, but in order to understand the trends better, it is necessary to study the changes taking place in particular fields in greater detail. In addition to the differences between the national situations, such a study is also confronted with the characteristic diversity of the different sectors of activity. The very concept of a "sector" is not necessarily appropriate, since training is geared more towards occupations than sectors and many occupations may be divided between a number of different sectors.

208. Whatever the case, the choice of fields to be studied needs, as far as possible, to take account of the factors distinguishing them from each other. These may be their economic characteristics, such as the size of firms in the sector, the rate at which they are developing, particularly linked to the impact of technical progress, their professional status, the share of skilled jobs requiring training, or the extent of social organisation and the influence of the social partners.

209. Given the scope of this study, it was not possible systematically to examine all these criteria together, but account has been taken of them wherever possible in the choice of the three fields which the participating countries were asked to study in greater detail:

-- the construction industry, in some cases together with public works, which are still often dominated by small businesses and traditional forms of apprenticeship (particularly the construction industry);

-- the tourist industry, generally in its broadest sense, the recent growth of which has led to problems with the development and institutionalisation of skills and training.

### 1. The construction industry and public works

***Special features and growth trends in this sector***

210. This sector has many peculiarities, as regards both the features typical of its economic activity and the type of skills and training problems encountered.

211. Economic activity in this sector covers a range of fairly different branches: on the one hand, the building and construction trades as such, within which some countries draw a distinction between major projects and

residential building, and others tend to differentiate between carcass and finishing work, and, on the other hand, public works. The Netherlands report also includes installations (heating, air-conditioning, etc.), which are on the edge of the construction industry and could as easily be classed under the metal industries or, to some extent, advanced technology.

212. Taking the sector as a whole, all the countries note that it is above all characterised by the high proportion of small and medium-sized firms, although far more so in the case of the construction industry than in public works. The report on Germany considers this long-standing feature to be very significant and points out that the number of small businesses has been growing since 1950. However, they generally limit their activity to more traditional construction work, leaving the more technically-demanding work to larger firms. The French report concludes that the tendency is towards polarisation, given the growth in small-scale industries over the past 25 years at the same time as a trend towards the grouping together of large firms.

213. With respect to training, these developments mean it is difficult for small firms to provide training in a sector, where, as will be seen, apprenticeships are very common.

214. Another feature of the sector is that it is highly sensitive to economic variations: business in the construction industry operates in cycles, and small firms, with only a small capital, suffer from periods of recession and are only able to survive thanks to their flexibility (Germany). Consequently, the situation can easily switch from a shortage of manpower, particularly skilled labour, to a situation of unemployment. Furthermore, the number of apprentices recruited by firms varies considerably according to the economic situation, with the result that training lags behind the activity cycles (as noted, in particular, in Canada) and imbalances appear on the labour market.

215. Several countries (Finland, France, Italy, Sweden) are witnessing a decline in the construction of new buildings, offset by a growth in maintenance work and home improvements which explains the more positive trend as regards employment figures in the trades concerned: fitters, plasterers, painters and decorators, coaters (France).

216. All the countries note that, like the other sectors, the construction industry has been affected by the increase in competition. The result is the search for enhanced efficiency by means of organisational streamlining. In Germany, competition depends not only on prices, but increasingly also the ability to respect delivery times and the search for new technical and, above all, environment-friendly solutions, as well as quality and services geared to customer requirements. Other countries also mention the need to improve the level of quality and reliability, which in the past was often lacking.

217. Reference is often made to the growth in sub-contracting, particularly as a cost-saving measure. Prefabrication is more common, as are efforts to develop a more industrial organisation and reduce labour. These efforts are hampered, however, by the wide range of different production processes. A typical feature of the Taylorist types of rationalisation found mainly in large firms is the attempt to enhance the study and methods functions. The margin of

autonomy given to the building site is maintained and the traditional skills of the workmen are not really brought into question. France has also been experimenting with more flexible organisational methods aimed at improving labour productivity.

218. Technical progress (use of new materials and procedures, information technology - which so far is essentially limited to the technical departments and has not yet had much impact on the worksites) has probably not affected work in the construction industry as much as work in many other industries.

***Skills and employment***

219. The impact these developments have had on skills is not clear, with the result that conclusions drawn are sometimes contradictory. It is the case, at least, in the French report according to which there is a "noticeable lack of pointers that could be used to define new skills". The difficulty of analysing the situation is illustrated by the apparent contradiction between the increase in the number of building projects involving more prescriptive tasks, on the one hand, and efforts to encourage participation and enrich operative tasks, on the other hand.

220. Although a generalisation of this analysis is not possible owing to insufficient elements, two of the conclusions in the same report probably also apply to other countries. It states that although the "worsening of employment conditions has not helped efforts to promote an organisation based on skill training", everyone would seem to recognise the "need to raise the level of skills of site-workers", whether to meet firms' expectations or as a means of enriching the work on construction sites and thereby restoring its image".

221. According to some reports, developments in the construction trades are, on the whole, slow to take place. It is particularly the case in Iceland, where the most important trade is still carpentry, which has not changed a great deal from its most traditional forms. In other countries (Scotland), changing practices in the industry are creating a divide between traditional skills and those actually required by the modern construction industry. In Canada, the work has retained an element of craftsmanship but has been affected by the many changes that have taken place in terms of the equipment, techniques, and methods used. The report on Iceland identifies a tendency towards a growing division of skills, between manual production tasks, on the one hand, and preparatory and managerial work, on the other hand, which requires a more technical and intellectual approach.

222. The German report places greater emphasis on the elements of change, insofar as it considers that "basic and multidisciplinary skills are becoming more important than more traditional and more specialised skills limited to one activity and imply a greater capacity for inter-disciplinary teamwork and problem-solving, as well as a willingness to take part in continuing training. A bricklayer who only lays bricks - as was frequently the case in the past - is now a rarity." In spite of its more reserved judgement, the French report also refers to the need for multi-disciplinary skills, autonomy and a high level of qualifications, which are usually more in keeping with the industrial approach developed by large firms.

223. The occupational structure is also affected by the growing role of maintenance and the emergence of new techniques (insulation, air-conditioning, electronic installations) implying the development of new businesses.

224. In several countries, the number of people employed in the sector is falling: from 1.26 million to 970 000 in ten years in Germany, and by 2.2 per cent per annum between 1982 and 1987 in Italy. In France, the sector shed one fifth of its manpower between 1975 and 1986, before benefiting from the economic upturn in the late 1980s, and has recently been hit once again by the recession. In other countries, however (for example, Canada), the sector has experienced a growth period which is expected to continue.

225. The trend towards a drop in the employment figures, on the one hand, and the high rate of mobility and the fact (noted in the German report) that many workers do not stay in the sector, on the other hand, may explain the ageing of the workforce observed in particular in Canada, France, where 42 per cent of employees are over 40, and Germany, where 60 per cent of supervisors and highly skilled workers are over 50.

226. This age structure may go some of the way to explaining the relatively low level of education among the workforce. In France, the majority of employees in this sector are still unqualified and their level of education is rising only slowly. It is higher in finishing work than in carcass work, whereas in public works only a small percentage of workers have vocational qualifications, but a relatively high percentage have obtained their baccalauréat or a higher education qualification. In Australia and Canada, it is estimated that the majority of workers have not received any training and as few as 10 per cent in the case of Canadian carpenters. In Finland, where the building trades are fairly attractive to workers, it is possible to recruit candidates with higher levels of education, but, nonetheless, only 25 to 30 per cent of employees are in possession of a qualification or have received training.

227. The building trades naturally employ far more men than women. According to a German law passed in 1935, only men may work as builders, and in Canada, women generally account for only 4 per cent of apprenticeships. However, several countries (including Germany) note a certain increase in the number of women receiving training.

228. Most countries point out that the construction industry has a negative public image, owing to difficult and dangerous working conditions (Germany, Scotland), job insecurity (Germany, Scotland) and the fact that construction work is not considered to require much technical skill (Scotland). This poor image can hamper recruitment and explains the low attraction of courses offering training in the building trades.

229. In Germany, it is felt that the only times it has been relatively easy to recruit apprentices have been when the needs of other sectors have already been satisfied. It is estimated that, on average, ten apprentices would be needed in training for every 100 skilled workers in active employment, but this percentage is generally not attained, and even fell to as low as 3 per cent in 1970. In Canada, owing to the high rate of retirement, young people's

reluctance to join the sector, and the fact that the country now relies less on immigrant labour, it is feared that the return of economic growth will bring a shortage of skilled labour. The same analysis applies in Finland.

230. In Scotland, however, contrary to forecasts based on the declining population, the level of recruitment of apprentices remained stable in the early 1990's. The reason given for this situation is the security offered by apprenticeship in this sector, in a period when employment prospects for people completing their education were poor. Lastly, Finland is a notable exception, insofar as construction training courses have been fairly popular there over the past few years compared with other technical training courses, such as those connected with the metal or textiles industries. According to a survey conducted among young people, the reasons for this situation are the attraction of doing a job with variety, high wages and the satisfaction of seeing the results of one's own work.

231. The majority of countries, however, are faced with the problem of how to attract workers towards training and the different trades in the construction industry. Germany is particularly concerned about the shortage of skilled labour and believes it may be possible to help solve this problem by improving the quality and interest factor at the level of basic training and by providing more continuing training opportunities.

***Training and how it has changed***

232. Given the characteristic features of this sector and, above all, the essential role still played by practical know-how and positive habits and attitudes, which can only be acquired in a work situation, apprenticeships are still very important for training people in the building trades and public works, particularly work on building sites. This characteristic feature of the sector explains why the differences between training and education systems (in particular the respective roles of schools and firms) are perhaps less acute than in other fields. The strength of tradition in the building trades and the fact that skills have perhaps undergone more limited change also mean that the move towards reform may not have been as strong as in other fields.

233. Nonetheless, it is interesting to study recent developments. They have often represented a gradual adjustment to the changes mentioned above but in some cases have been part of a more general reform process. This study focuses on the more detailed analyses given in the reports by a few countries which present different training systems.

234. The German report contains a detailed study of the conditions under which training in the construction industry has changed, particularly the conceptual and implementation phases of the reforms carried out in the 1970s and 1980s. However, these reforms merely adapted the country's dual system, which remains the foundation on which the system used to train skilled workers in Germany is based.

235. The reason for the amendments to the training system are attributed not only to the changes that had taken place in the nature and level of skills, but in particular to the desire to attract more young people and, in so doing, prevent a serious shortage of skilled labour. In accordance with the principle of co-determination, the amendments were discussed at length between employers' and trade union representatives and, to a lesser degree, representatives of the individual *Länder*, given that the final agreement required the approval of the federal government. Reports of these negotiations reveals certain differences of opinion, not only between employers and trade unions but, in some cases, also between small-scale and industrial firms, between representatives of different trades and between certain *Länder* or representatives of the social partners at the level of the *Länder*. Discussions concentrated on the length and location of training (with some sides in favour of a purely school-based first year), and funding. However, the desire to reach an agreement and the willingness to accept a number of concessions finally resulted in a consensus which may be summed up as follows:

236. The length of training has been kept at three years, despite the previous intention to shorten it, but programmes now include gradual specialisation. After a common core, designed to teach students the basic skills during the first year, the courses continue, in stages, offering training in 17 different occupations. Responsibility for training is shared between three partners: schools, firms and training centres, which are attached to the sector as a whole rather than a particular firm. The role of practical placements in firms increases as the programme progresses. The extra money needed to finance the training centres is guaranteed through contributions from firms, paid into a common fund.

237. So far, the reform only applies to some of the young people in training. However, it would seem to have helped to improve the quality of training, ensure better co-ordination between trade associations, and solve the problem facing small firms, whose size limits their ability to provide quality training that is sufficiently broad in scope. However, a number of problems remain, namely trainees' low level of education and their negative attitude towards school, the need to adapt the system while resisting the tendency that allows certain occupations to benefit from special arrangements, and, above all, the need to extend the system to further training.

238. After Germany, which represents a model for training by apprenticeship, France represents a largely school-based system. In the case of the construction industry, however, "a special feature of the training is that it is delivered jointly by schools and a system of apprenticeships" (at least for first level qualifications). Forty per cent of young people preparing a first level qualification are apprentices. "The discussions surrounding this aspect of the present reforms have attracted particular attention: a system that alternates between schools and firms has the support of all the partners involved and is a form of training that has been practised a long time in this branch of industry; in parallel, the desire to raise the educational level of young people is tending to undermine the occupational categories characterised by the very high percentage of workers with only a CAP (a first level qualification preparing young people more specifically for trades and placing greater emphasis than other courses on practical skills).

239. Apprenticeships in the construction industry suffer from an image that is outdated and poorly considered. The educational level of apprentices is especially low and is becoming even worse. However, in the consultative bodies of the Ministry of National Education, and with the participation of the social partners, intensive efforts are under way to reform these training courses. The recent reforms are part of the overall approach to vocational training and concern the following points:

240. Whereas the tendency of the general policy is gradually to replace specific and practical training (CAP) by courses with a broader scope (BEP), it was accepted in the case of the construction industry that students would only branch out into broader training once they had been trained in a particular speciality and that too much time should not be spent on theory to the detriment of practical knowledge.

241. A longer training programme (vocational baccalaureate) was created in order to meet the need on building sites for workers with a higher level of skills and at the same time respond to the social demand for longer studies and recognised qualifications. This new programme raised the question of the relationship with continuing training, as well as the question of the experience that is necessary in order to have access to positions of responsibility, and upon which employers insist.

242. The development of a mixed in-school/work experience system is encouraged through the introduction of industrial placements (which presupposes that a firm has sufficient capacity to accept and look after trainees, which cannot be taken completely for granted) as well as measures to improve the image of the apprenticeship system and extend it to all vocational qualifications - a policy consistently applied by the last few governments.

243. Compared with the previous examples, Canada and Scotland represent a third model, characterised above all by a high degree of decentralisation. In Canada, the construction industry is considered to be structured according to the different trades, training for which mostly takes the form of apprenticeship. "The provincial governments provide the infrastructure for training, including the definition of legislation, standards and programmes, and the share of teaching administered by vocational and trade schools, and colleges".

244. Employers and apprentices fund most of the resources necessary for apprenticeship, the latter out of the limited payment they receive. The federal government issues grants to apprentices, for the period of in-school training, and to the provinces, on the basis of signed agreements. The Board of Apprenticeship Directors represents the provincial administrations, sets the standards for examinations and programmes and co-ordinates the scheme aimed at establishing national standards to facilitate workers' mobility.

245. The number of apprenticeships is falling, and there is a high drop-out rate, associated with the late age at which students start training and the length of apprenticeship (4 years), which mean that the average age of apprentices is relatively high (26 years). There has been some criticism of

the outdated rules governing pay and guidelines set for apprenticeship and of an inflexible system which delays adaptation to necessary change. Employers, for their part, are concerned about the efficiency of the system.

246. A few years ago, a Task Force recommended that apprenticeship be run along more flexible lines, to combine alternate periods of in-school training and practical work experience based on day-release and longer periods of in-firm training. As far as possible, the practical training periods should coincide with the activity cycles characteristic of this sector of activity. Another recommendation favoured moving from a system based on the length of training to a system based on the skills learnt. The Task Force would like to see more women, ethnic minorities and persons in remote communities taking part in the scheme. The other subjects discussed include the need for national certificates to facilitate the movement of workers between provinces and the advantages to be gained from preserving the formation of cyclical variations inherent in a system totally dependent on demand.

247. According to the Scottish report, there is a stronger tradition of apprenticeship in Scotland than in the rest of the United Kingdom, where it is sometimes difficult to persuade firms to accept apprentices. As a result of the relatively high pay awarded to apprentices, and for fear of wasting time which would be harmful to efficiency, small firms find there are no benefits for them in accepting apprentices and they lack the necessary stability and structure for delivering organised training.

248. In the United Kingdom, responsibility for setting apprenticeship standards was entrusted in 1964 to the Construction Industry Training Board (CITB), one of several sectoral bodies in existence in the country. The Board introduced a system of financial contributions from firms which were used to subsidise approved training activities. By the end of the 1980s, two-thirds of apprenticeship activity depended on the CITB, with the local authorities responsible for the remaining third. In 1991, the funds allocated to these beneficiaries were transferred to local bodies responsible for dividing the resources among the different fields of training. The report on Scotland notes the complexity of the present system involving a plethora of education and training bodies and employers' representatives.

249. The aim of the Youth Training Scheme was to ensure that all young people in the future had access to some kind of training. Training Levels 2 and 3 lead to "Standard Vocational Qualifications" which are the first recognised qualifications for operative workers on construction sites. However, the setting up of this system raises the problem of assessment, since knowledge in this field is lacking, and the problem, so far not addressed, of how young people can progress to become skilled workers. Nonetheless, access to skilled training is now more flexible, insofar as it is based on recognised national qualifications and not necessarily an apprenticeship contract.

250. Progress is continuing with the fixing of standards in keeping with the NVQ scheme and its Scottish version (SCOTVEC), but challenges the different interests at stake. The new qualifications are often no more than a modular version of the old ones, in spite of the criticisms levelled at the latter

questioning their ability to meet modern needs. The qualifications do little to promote multi-skilling, but this has to do with the fact that the lead bodies represent a large number of different trades, each keen to preserve its particular identity.

251. Given that higher qualifications were traditionally acquired mainly through experience in the United Kingdom, the intention now is to define qualifications for the level of technician and beyond in order to lay new bases for training.

252. The report concludes that the strength of the current approach to introducing new qualifications comes from the close involvement of employers, but adds that this also contributes to maintaining the high level of segmentation that exists at present between levels of qualifications and between trades.

253. The Australian example presents a number of similarities with the two previous models, but also some significant differences. Apprenticeship in Australia is also the sole source of training of skilled workers, but is currently undergoing a series of reforms introduced in response to a critical report on the present situation in the construction industry. Reservations have also been expressed about the capacity of firms (or some of them of them at least) to cope with the necessary changes.

254. One of the typical features of the Australian model is its global approach. The problems of work organisation, economic efficiency, pay, career structures, qualifications and training are all being addressed together, with the particular aim of encouraging workers to increase their level of qualifications and acquire a broader range of skills. This global approach is put into practice, in particular, within the framework of model construction projects conducted with the support of an agency for the development of the construction industry so that experiments can be carried out with new measures aimed at overcoming the deficiencies of the sector.

255. Like in Germany, the intention is to develop training centres common to the entire sector and to replace the traditional approach based on training workers for individual contractors with training administered by the sector and for the sector.

256. As in the United Kingdom, the firm intention in Australia is to develop a system of qualifications and training based on an analysis of the skills involved. Implementation of this system, however, also poses a number of problems, namely the differences compared with the existing system of qualifications, which provides for a multitude of low level skills, the fragmented nature of employers' associations and the federal structure of the country which, as was seen with Germany, implies lengthy negotiations before an agreement can be reached.

257. The other reports received on this subject reveal a wide range of different training structures, often with several parallel paths all leading to the building trades. It is particularly the case in the Flemish part of Belgium, where full-time school-based education co-exists with career-

advancement courses, several types of apprenticeship and redeployment and retraining courses. It is also the case in Italy, where each province organises its own vocational training either to supplement or substitute the education administered in state schools, and, lastly, in Iceland where students learn the building trades through either apprenticeship or school-based teaching and practical experience, or a combination of the two.

258. Several of these countries are witnessing some of the characteristic developments analysed in greater detail below:

-- large-scale participation of employers in discussions to adapt the training system (Flemish Community in Belgium, Finland, where "vocational delegations" have been set up to co-ordinate between training and the workplace. Despite the criticisms of the way they operate - inadequate levels of activity and authority - the delegations have an important influence on the content of training);

-- training is becoming broader in scope and more extensive: the number of specialised subjects in Finland was reduced during the 1970s, with the result that all students in the construction field now receive the same teaching in the first year, during which they acquire a broad knowledge of the whole field. In Belgium (Flemish Community), training is now more multidisciplinary in scope; students do not specialise until they reach the third grade (from the age of 16-17); the emphasis is on general subjects and building on the scientific bases already acquired; special attention is given to state-of-the-art technology and more time is spent on employment training. In Iceland, the greater emphasis placed on theory means students are able to continue their studies at technical college. Europe.

259. However, this broader and more detailed approach does not imply a move away from practical training. All countries are keen to maintain or develop a system that alternates between school-based training and practical work experience. Sometimes, however, there are doubts as to whether the link between theoretical and practical training is sufficient;

-- several countries refer to the necessary development of continuing training which has given rise to a number of different measures. In Australia, for example, qualification centres have been set up within the framework of model projects. The particular aim is to offer encouragement to adults reluctant to return to school. Another approach consists in encouraging workers to set up independent teams on special projects where they are able to carry out construction work and improve their skills at one and the same time. Similarly, apprenticeship schemes have been set up for the young unemployed.

-- lastly, the problem of certificates is being discussed, not only in Anglo-Saxon countries which are introducing national qualifications, but also in other countries, such as Finland, where the intention is to bring qualifications into harmony with those in the rest of Europe.

## 2. Tourism industry

### *Special features and development trends in the sector*

260. The first problem encountered with a study of the tourism industry is one of definition. The Netherlands report pays particular attention to this problem. *Stricto senso*, the "tourism industry" covers activities connected with the organisation of tourist travel and activities, in particular by travel agencies. However, the term is often used in a broader sense to include the hotel and catering trades and leisure activities such as camping. The majority of the reports received from the member States approached the tourism industry from this broader angle, on the basis (noted in the Australian report) that the different elements were all inextricably linked. It remains that all the countries found it was difficult to set limits for an industry with which they were often not very familiar and which could not easily be defined using statistics, either because it bordered onto other activities (for example, transport) or because it took many different forms, which were liable to vary.

261. Regardless of the framework of the study, all the participating countries agreed that the tourism industry was booming, particularly as a result of the growth in internationalisation, but also business travel. Furthermore, all forecasts suggest that the present expansion of the industry is set to continue.

262. With regard in particular to "tourism" in its strict sense, it is possible to distinguish between "providing" or production companies (tour operators) which produce and distribute travel and "receiving" companies which organise hospitality facilities. The first category of companies may be fairly large and tend to employ more specialist staff, whereas the second category are generally small and employ staff with broader skills.

263. An obvious feature of the sector is that it is seasonal. This fact has a considerable impact on the employment situation, manpower and training.

264. The increase in competition is affecting the whole of the sector and developments are sometimes large-scale. The Italian report, for example, refers to "far-reaching and inevitable restructuring, brought about by changing demand and the large-scale, albeit belated, reorganisation of supply".

265. In all countries, the industry is trying to enhance the quality of products and customer services, as far as possible without causing any damage to the environment, and to improve management efficiency. Methods include wide-spread use of information technology, particularly for everything connected with travel, reservations, communications and management. In this context, "recruiting and developing its human resources have become major priorities for the industry" (Canada) and "the ability to develop tourism in the face of international competition demands the highest possible level of quality and service. For this the industry will need to attract highly skilled manpower which will have to be trained" (Scotland). Furthermore, tourism in Scotland attracts customers who are increasingly better-off and more demanding, but also older, which imposes new demands, in particular as regards

healthcare. The same trends apply in the Netherlands where the industry has also observed a diversification and even individualisation of customer demands, as well as the impact of internationalisation.

266. Developments in the catering trade focus more on efforts to rationalise and reduce cost-prices, implying tighter controls on stocks and staff combined with new organisational working methods. The semi-industrialisation of food preparation is made easier by the development of new technologies (vacuum-packing).

***Qualifications which are sometimes not easily identifiable***

267. The Netherlands report notes that the tourism sector includes a number of specific trades which have not been formally identified or classified because they lack an adequate "social structure". Consequently, it is rather difficult to analyse these trades in detail.

268. However, like the French report, the report on the Netherlands describes the impact of the above-mentioned developments on qualifications in the tourism industry, per se, and in the hotel and catering industries. In the former, all employees must be able to work with computer systems, use of which has been greatly simplified by product standardisation and computer software that is more user-friendly. (A study conducted in Canada concludes that technological progress would not appear to have had a major impact on the staff qualification and training.)

269. According to the French report, employees above all need to have a good mastery of sales techniques, customer-service and advisory skills. In large travel-producing companies, a limited amount of more specialist marketing, communications and management skills are also required.

270. In the hotel industry, the more "industrial" structure of companies means activities must be organised more in accordance with commercial constraints and take greater account of economic factors. Each function must in future be more adept at incorporating the managerial and commercial skills essential for the sound running of a hotel business. The trend towards multi-skill capacities, which always existed in small family establishments, is now spreading to other business structures.

271. These trends also apply, albeit in a different way, to the different forms of catering, and to accommodation services, which will increasingly be associated with proposals for cultural or sports activities. The Finnish report, which mainly addresses the catering industry, comes to similar conclusions and points out that staff are now expected to show more flexibility, initiative, and independence, as well as a willingness to serve customers, save money, assume responsibilities and co-operate. The role of supervisors is becoming more important as they are given more responsibility for business results and team leadership. Similarly, catering personnel in Canada are expected to take on more and more managerial or supervisory tasks and spend less time on purely culinary activities. The italian report concludes that the "tendency is to try to recruit highly qualified staff who are easier to train thanks to their higher levels of basic education".

***An expanding workforce***

272. Tourism, in its broadest sense, is one of the sectors that have experienced the greatest expansion of their workforce (2.6 per cent per year for the past 18 years in Scotland). However, it is to be expected in Scotland that there will be a significant drop in the number of young workers, who currently account for the majority of the workforce in this sector. "Given that in many cases careers in the tourist industry are failing to attract newcomers, and considering the high turnover of staff, steps will clearly need to be taken to maintain the flow of workers necessary for growth".

273. The same applies in Canada, where tourism is facing "critical shortages of both skilled and unskilled workers... (It suffers) from an image problem due to perceptions of poor working conditions, low wages and limited career paths...(resulting) in high levels of ... turnover". Once again, Finland is an exception. There, occupations in the sector are better perceived and many young people are keen to enrol for training courses in receptionist and catering skills.

274. Jobs in the tourism industry are frequently seasonal and insecure. The workforce is characterised not only by a high percentage of young workers, but also by a high proportion of women and low levels of education, although the latter are now tending to rise: 52 per cent of hotel staff in France were without any qualifications in 1989, compared with Iceland in 1981, where only 800 workers in the tourist industry were qualified out of a total of 7,000. In Canada, only 19 per cent of staff working in tourism, in its broad sense, were educated beyond secondary education, compared with 33 per cent for the working population as a whole. Studies have shown that 73 per cent of managers had received no formal training and that only 5 per cent had a higher education qualification, compared with an average of 16 per cent for the rest of the working population.

275. The Netherlands report notes that the labour market in the tourism industry is not a "professional" market and that companies value the personal qualities of their staff above all else. This observation is consistent with the results of a study which revealed a serious imbalance between the qualifications normally expected of tourism staff and their actual level of education. According to the study, this imbalance is due to the importance attached to experience and on-the-job training, but also perhaps to a certain shortage of training resources and, to some extent, a lack of professionalism on the part of some of those concerned. The report also gives a detailed analysis of the high mobility rate among staff in this sector, which can equally be observed in the other countries.

***Training and how it is changing***

276. The problem posed by training in the tourism industry is very different to the problem of training in the construction and building trades. The tourism sector is less uniform; tradition is not nearly as strong; training courses have often been set up only recently; there is a wider range of

training channels and apprenticeship does not play such a dominant role. According to the Australian report, this is an advantage for tourism and the hotel industry, which "has been a leader in the field and has not been encumbered by historically narrow craft-based awards, industrial pressures and entrenched work habits".

277. It is probably possible to generalise another observation concerning this country, according to which training in the tourism sector is less dependent than other sectors on the state training system, given that, on the one hand, the largest companies (in particular the airlines) have their own training system and, on the other hand, training often takes place informally in the workplace. More structured training is often a recent development.

278. The Netherlands report emphasises that training is conditioned by the difference between the types of activity and degree of occupational structuring in the hotel and catering industries, on the one hand, and tourism, per se, on the other hand. In the first case, vocational training has been formalised in institutions for over 40 years and has helped obtain official recognition of a particular trade. In the second case, there is no organisation representing employers and often a general education followed by on-the-job training or courses administered in business schools has been considered sufficient. The creation of a formal training system is more recent and the two systems are now beginning to co-operate with each other. This development will help obtain official recognition and a vocational identity for activities in this sector.

279. With regard to the different types of training in this sector, only two (the decentralised systems according to the Anglo-Saxon model, and the more centralised, predominantly school-based systems) are well represented in this analysis, since there is a lack of information about the dual system given that the German report does not cover the tourism industry (even if the Netherlands report notes certain similarities with the German system).

280. The Scottish report provides a detailed description of the situation with tourism training and the problems it poses in an Anglo-Saxon country with a history of decentralisation. The report also shows a wide range of different paths leading to the tourism trades, in their broad sense: modular full-time training and education in colleges for people over 16, various training schemes for 16 and 17-year-olds, adults, and the unemployed, and short work-release courses delivered in colleges and private establishments.

281. It notes that in the United Kingdom generally, a recent report found that the training skills of qualified college leavers were too narrow and more superficial than those of their peers in the rest of Europe. An audit conducted among employers and employees in Scotland concluded that training courses were severely ill-adapted to requirements. They were felt to be very academic and, although highly satisfactory in the best establishments, the level of quality often left much to be desired. One of the problems would appear to derive from employers' poor definition of their needs.

282. Before these problems can be solved, a number of institutional questions need to be addressed, starting with the setting up of new local enterprise companies. There are also structural and financial hurdles to be overcome and

training opportunities must be promoted. A Forum has been set up in Scotland with the participation of practicians to co-ordinate local initiatives. In the United Kingdom as a whole, there are plans to form a consortium grouping together the different bodies connected with tourism. However, these initiatives have yet to be implemented in practice. Their success depends on sufficiently broad representation of the parties concerned, the quality and attitudes of the participants and funding opportunities.

283. Positive achievements include improved access to training and a greater degree of flexibility, particularly at the beginning and end of studies, and the possibility for individuals to study at their own pace with the help of a tutor. Another initiative concerns the accreditation of work-based learning, which is a modular system with continuous assessment. Accreditation of prior learning is also intended to help overcome the problem some people have in absenting themselves from work to follow formal training.

284. Like in the construction industry, these initiatives are in keeping with the concern to develop a national system for recognising qualifications, based on an analysis of skills.

285. Other Anglo-Saxon countries share this concern. One example is Canada, where "a major challenge facing tourism in Canada is that as yet there is no national system of standards and certification for training in skilled hospitality jobs. Furthermore, while there is an infrastructure of organisations and VOTEC deliverers devoted to tourism VOTEC, it represents a fragmented network.. A recent analysis .... emphasised the need for a comprehensive, balanced, and integrated tourism education and training infrastructure.... Certification of skilled workers has become a major issue in Canada's accommodation and food services sector". Certification would help to ensure health and hygiene requirements are met, improve service quality and worker mobility, facilitate staff recruitment and classification, and enhance the industry's image. Several certification initiatives have already been taken involving trade associations, provincial governments and educators.

286. There is felt to be a need in Canada to establish stronger linkages between employers and VOTEC institutions. In the case of many food services firms, such links are inexistent. It is also necessary to improve the industry's image in order to attract and retain workers. Measures have been taken to include tourism as a subject in the high school curriculum. The programme is designed to teach students core concepts and develop behavioural skills that will favour group work, human relations and communication. Federal and provincial governments are jointly working on incorporating a tourism awareness programme in the high school curriculum.

287. Faced with relatively similar problems, Australia seems to be progressing fairly well with its policy to reorganise the whole of its education and training system along the general lines already described in connection with the construction industry. The tourism industry is the leading industry in setting up a training framework that links career paths to skills development and the industrial awards. A national body (Tourism Training Australia) has been asked to define standards for skills and has developed a core curriculum for cooking, incorporating flexible entry level arrangements, a

modular format and certification processes. It is expected that improved quality will mean increasing both the range and depth of skills of operative staff and the level of training of managers. There is a need for a more definite link between external training programmes and what is happening in the workplace.

288. Now that the framework has been defined, the focus will shift to implementation of the system, including at the enterprise level. It should be borne in mind that vocational training is the responsibility of the states which make up the Federation. They are sometimes slow to change and co-ordination is sometimes also slow and inefficient, highlighting the tensions inherent in a federal system. Small firms find it difficult to make themselves heard. Generally speaking, employers need to be given a greater voice in determining the directions for the training system and stronger links need to be developed between firms and schools.

289. With regard to systems based on a tradition of centralisation dominated by the public sector, the report on France lists a comprehensive range of vocational diplomas leading to the tourism trades, in the broad sense of the term. Training for these qualifications is delivered in 182 schools (of which 80 per cent are in the state sector) and 53 apprenticeship centres which have essentially risen up over the past twenty years or so. In the mid 1980s, it was felt that these diplomas were no longer sufficiently well-adapted to recent developments and lagged behind other countries. A series of decisions were therefore taken with a view to bringing the diplomas up to date.

290. The first step taken in this context was to reduce the degree of specialisation and replace references to a specific occupation by names of courses geared towards the related function, such as Cookery or the Hotel Trade. Secondly, training courses were developed for technicians (two years after completion of secondary education), one of which is specifically geared towards tourism. In the case of training in the hotel and catering trades, the distinction is now made according to sector rather than function (management or production) and may enable students to acquire a broader range of skills within a given sector.

291. In Finland, the initiative with regard to tourism training came first of all from tradespeople, until the State took over the reins in the 1970s. Sixteen institutions offer training in the hotel and catering trades, most of them in conjunction with an establishment where trainees can try out their skills in practice. The curriculum of these institutions was revised in 1986. There is also a system of apprenticeship.

292. In order to cope with the rapid changes affecting the trade, reform is acknowledged to be necessary, particularly with a view to greater flexibility and closer co-operation between training establishments, the system of vocational education, and firms. Existing training is too highly specialised, whereas firms are looking for more multi-skilling, particularly between cooking and service activities. Above all, firms would like to see alternate classroom/workplace training. They consider that if the training system included longer periods of in-firm training, students would first of all acquire a relatively broad knowledge of the trade before specialties in their

particular fields of interest. Such a system should produce employees and middle-managers with a higher level of qualifications, while adopting a broader approach with a wide range of courses of different lengths, the general trend being towards shorter training. Lastly, continuing training should be developed.

293. The Belgian report (Flemish community) refers more specifically to tourism in its broad sense. It notes the wide range of different types of training available and suggests that they try to cover too much ground, resulting in the need for more clearly defined objectives and profiles. One of the problems concerns the balance between general and vocational education and training. Priority is given to the former, whereas employers, on the contrary, are calling for practical training that produces immediate results. The link between the education system and firms, which was virtually inexistent until now, has recently been institutionalised with the creation in 1990 of a committee responsible for proposing ways of improving tourism training.

294. The important role of general education may also be observed in the programmes taught in the state-run vocational establishments in Italy and Iceland. Until only recently, there had been very few opportunities for tourism training in Iceland and the few that did exist were linked to general secondary education. Skills were often acquired abroad. A school of tourism was set up in 1991 and plans drawn up in 1984 and revised in 1992 provide for basic courses for all occupations connected with food, followed by gradual specialisation. Private initiatives have also been developed and have led to the creation of a Tourist Training Council responsible for co-ordinating all the different activities.

295. With regard to the way training is implemented, the Netherlands report identifies two trends common to the different activities relating to tourism: the externalisation of training, which is increasingly delivered by institutions that use public funding rather than solely through classes funded by firms, and the greater importance attached to training, in particular continuing training. This is a new development given that for a long time firms, and particularly the smallest among them, attached greatest importance to personal qualities and, at most, a fairly general level of training. A tendency towards the development of modular training courses has been observed in the hotel and restaurant trades, but is not yet apparent in the other branches of tourism. This more modular approach is aimed at enhancing efficiency and flexibility and the ability to adapt to different work situations, while at the same time avoiding an artificial divide between the different subjects studied.

296. The report on the Netherlands also contains an analysis of the different activities being carried out by the Centre of Training in the Tourist Industries and trade organisations to develop training in the future. They suggest that more priority is being given to setting up a qualification system and analysing job classifications and the labour market, and that steps are being taken to develop an overall training structure designed to give coherence to all the individual training activities. The report also examines the issues at stake between the parties concerned, but this point will be picked up again in the conclusion.

### 3. The field of advanced technology

297. This section does not refer to a single sector of activity, insofar as the countries taking part in the study were fairly free to choice the field which seemed to them to be of most interest. Three sectors received particular attention:

- -- metalworking, in particular machining, given its considerable importance in the industry and the rapid spread of equipment that uses new information technology and affects working processes and job qualification;

- -- electronics, itself at the heart of technological progress, in terms of both products and production methods;

- -- graphic arts, which have also undergone spectacular developments as regards the techniques used and the different occupations, and which have their own specific labour relations system.

298. The diversity of the sectors analysed means it is possible to broaden the scope of this study, but there are less opportunities for international comparisons. Furthermore, not all the participating countries contributed to this section on advanced technology and those contributions that were received contain very differing degrees of detail.

#### *Characteristic features of the sectors studied*

299. As regards mechanical engineering and electronics, from the point of view of training, they should be classed as occupational fields rather than sectors. It is true that in both cases there is a specific sector which specialises in the production of electrical and electronic goods, but the occupations corresponding to these two specialised activities are found in most sectors of activity, particularly with respect to maintenance. The limits are therefore more difficult to define and it is not sufficient simply to consider the dynamics of the sector, per se, in relation to training.

300. A feature common to both production sectors is their crucial role in determining industrial development and a firm's ability to compete. They are also both vulnerable to international competition and have been greatly affected by economic variations and the emergence of new industrialised countries. Consequences vary from one OECD country to the next and a detailed study of them is not possible within the scope of this report.

301. The graphic arts industries are a very different case, corresponding to a small sector of activity with, however, its own highly specific features. The Netherlands report studies this sector in particular detail and, like the reports of other countries, notes the strength of social tradition and the very important role of trade unions. It was in this sector in the Netherlands, as early as 1914, that the first collective agreement was signed, and as early as 1917 it contained provisions on training. As the report points out, the characteristic features of these industries have therefore had a very significant impact on the development of the training system.

302. In recent decades, these firmly established traditions have had to cope with an intensification and internationalisation of competition, compounded by very rapid technical progress. The impact has been felt at the levels of the occupational structure and qualifications and therefore also training.

***Qualifications and how they have changed***

*Mechanical engineering*

303. The mechanical engineering field receives special attention in studies conducted into recent changes in labour and skills, principally because of the relative size of its workforce - in spite of shrinking as a result of productivity gains and foreign competition - but also because the mechanical engineering industries have been affected by spectacular and important new technologies: robotics, computer-aided drawing, design and production management, and in particular numerically controlled machine tools. These developments explain why labour analysts and sociologists find this field so interesting and have used it as the subject for many studies. The Netherlands report contains a summary of some of these studies.

304. Particularly with respect to machine tool operators, the studies generally stressed that there was no technological determinism, insofar as technology was not the only factor involved in skills and insofar as firms can choose from a wide range of organisational methods. nonetheless, it is generally possible to point to a number of developments which, either directly or indirectly, are more closely linked to technological change. Although equipment programming is increasingly user-friendly and is not often done by the operators themselves, the latter now require an understanding of the new operating systems in addition to their traditional skills. An analytical approach is now more important than manual know-how.

305. However, the studies above all showed that it was not possible to separate the impact of this new technology from economic and organisational developments. From an economic standpoint, it is primarily the increase in competition which has led to more stringent demands in terms of product quality, production diversification and modernisation, cost-control and management.

306. If the new forms of labour organisation are to meet these needs, the different functions must be decompartmentalised and operators given more responsibility for product quality and equipment maintenance. They must be able to adapt to different types of machinery and work more in groups. Consequently, less specialisation is required per type of equipment (e.g.. lathe or milling machine), particularly as the trend is towards automated systems. These findings from the studies conducted in France are not necessarily in contradiction with those referred to in the Netherlands report, according to which the tendency is towards greater specialisation, which may just as equally concern the specific features of a sector, or a firm and its production, as the type of machinery. In this case, there would be a certain contradiction, however, with the desire of employers to be able to move their staff around easily between several different work stations.

307. The way of overcoming this contradiction is to promote the ability of staff to adapt and learn new skills. They are also asked to show more initiative and independence, as well as a greater problem-solving capacity, in order to ensure optimum functioning of installations integrated into sets of machinery which generally form part of a continuous process. This analysis is confirmed by another study conducted in the Netherlands, on the correlation between employees' training and the job they do, which showed that the differences were not so much in terms of knowledge and know-how as attitudes. It was found in this context that training failed to pay enough attention to adaptability, problem-solving and the ability to work under pressure, or communications.

308. In conclusion, even if (as the report of this country shows), employers' opinions differ on the training required in the use of new machinery, it can be said that the general trend is towards an increase in the level of qualifications. As regards operators, some employers may initially have thought that automation would simplify their work, but they quickly realised that such was not the case and that the above-mentioned broadening of functions called for new qualifications. Consequently, they increased their demands, which they were able to slacken as workers became more familiar with the new equipment and as the new equipment became more user-friendly.

309. Employers are also more demanding because of the development of intermediate qualifications for adjusting, programming, managing and maintaining equipment and for product design and marketing. Furthermore, the gap between production workers and technicians is narrowing and firms now ask for technician qualifications for the most complicated production tasks.

*The other fields*

310. These analyses also apply to a very large extent to the other fields studied, namely the electronics and graphic arts industries. Radical technological change has taken place in the latter industry, with the rapid development of photocomposition and computer techniques. As a result, some of the traditional techniques and corresponding occupations are no longer required. A good example at the moment is the spread of computer-aided publication (CAP). Widespread use of this new technology poses a growing threat for specialist firms, at least with regard to typesetting. Automation is increasingly sophisticated and the use of computer terminals is becoming more and more common.

311. These developments are analysed in detail in the Netherlands report. They have led in particular to greater fragmentation of work and greater inter-sectoral distribution of the printing trades, bringing them closer, from this point of view, to the other industries. According to the report, the difference between mechanical engineering and the graphic arts lies in how they react to technological change. In the latter case, traditional trades have survived in parallel with the creation of new jobs adapted to new requirements. In mechanical engineering, however, the tendency is more towards a new occupational structure.

312. The Finnish report, for its part, points out that in the face of increased competition, firms will need to show more initiative and creativity, as well as being more customer-oriented.

313. Although, as has already been shown, the graphic arts industry operates according to a different labour relations model, like mechanical engineering it presents a highly typical image of skilled workers. This image is now being called into question and the new technology calls for a whole range of qualifications, from technicians to semi-skilled workers.

314. The same does not apply in the electronics industry, which is a new and rapidly growing field where the qualification of skilled workers has not asserted itself so clearly. The field is characterised instead by a high proportion of intermediate jobs for technicians, but also for semi-skilled or operative workers for the more repetitive production tasks. These developments pose a number of problems for adapting training.

***Mechanical engineering training and how it has changed***

315. It is in the field of mechanical engineering and metalworking that the model for skilled workers can be found, with a recognised qualification obtained through a well-established system of vocational training. It is for this reason that the changes in training in these fields have been taken as an example. They are analysed in particular detail in the German and French reports.

316. A reform of all mechanical engineering training in Germany was undertaken in 1987, after lengthy consultations between the federal government departments, the *Länder*, and employers' and trade union organisations, under the aegis of the Federal Vocational Training Institute (BIBB). It should be noted that although there is no legal obligation for employers' and trade union organisations to be involved in the process of defining rules and regulations for qualifications, in this particular instance they played a decisive role. Only one trade union federation (the powerful IG Metall) sat opposite several employers' organisations, sometimes representing different interests and opinions.

317. The consultation process was based on an exceptionally detailed study that had been conducted by the BIBB to analyse the nature of existing jobs, employers' needs and the prospects for change in the future. This research meant it was easier for the social partners to reach agreement, despite their seemingly incompatible positions at the start of negotiations: the employers' organisations wanted training courses that were more easily distinguishable, adapted to firms' particular requirements and lasting two to three years; the trade union federation, on the other hand, asked for standardised training courses, lasting three years and capable of meeting workers' economic and social requirements.

318. As early as 1978, however, an agreement was reached on a common basis, namely the definition of a qualification for skilled workers, incorporating

the concepts of flexibility, adaptability and participation in continuing training. These concepts were able to satisfy the seemingly different concerns of the various partners involved.

319. A compromise then had to be found between the requirements imposed by trade unions hostile to specialisation and employers still in favour of it. The compromise consisted in adopting the principle of gradual specialisation, after a common core of basic training, coupled with longer training stretched to three and a half years. Specialisation was put off until the third year, up to which point options could still be changed.

320. On the basis of this consensus, a fundamental change consisted in reducing the number of training branches leading to recognised occupations from 37 to only 6. The terms used no longer refer to traditional trades but to broader fields of technology.

321. It is compulsory for all training to include information technology applications and also electronics, hydraulics and pneumatics applications. It is stipulated that skilled workers must from now on be capable of working independently and emphasis is placed on the basic skills which must enable them to adapt to unforeseeable developments.

322. Education methods and the role of educators are changing to take account of these concerns and the diversification of apprentices' backgrounds. Experiments have been conducted to devise new, more active, interdisciplinary methods, which could help reduce the part played by on-the-job training and academic teaching in favour of more diversified methods combining a variety of different resources.

323. Application of the reform, after a probationary period which expired in 1990, was accompanied by a round of discussions and revealed problems of interpretation, some of which have not yet been resolved. One such example concerns the concept of "key skills". With respect to this concept, in particular, it was necessary to review the examination methods (how was it possible to assess these skills, or the capacity of students to work independently and plan their work?). The traditional divide between the role of schools (theory) and the role of firms (practice) seems increasingly brought into question by the more important role now played by training centres and firms' contributions to theoretical training.

324. The need to develop training in environmental issues and the qualification of educators are two of the problems which still require solving. The decline in the population is also likely to pose major problems for maintaining a sufficient number of apprenticeship candidates, particularly for occupations with a poor image that might need to be improved.

325. Although this process to reform mechanical engineering training took too long (ten years), it is considered to be exemplary and has served as a model for studies with regard to the other training fields. The length of the process was due to the complete involvement of the various partners, thanks to which the reform met with the acceptance of all concerned.

326. In France, where the training system is very different, the reform of mechanical engineering training also served as a "laboratory and helped promote changes in the training system". In an initial phase, the introduction of numerical control posed a number of immediate problems of adaptation for the workforce already employed in the field. In response to this problem, ad hoc bodies were set up under the aegis of the trade and governmental organisations and ran training/ adaptation courses.

327. In 1984, one of the three working groups set up by the Ministry of National Education to reorganise the vocational training of skilled workers focused in particular on mechanical engineering. Thus far, the training system for skilled workers had been characterised by the co-existence of two types of qualification: the first, and longest-standing, qualification prepared students for traditional trades and included a plethora of different specialist activities; the second, more recent qualification, provided more theoretical and broader training.

328. On the basis of work carried out for the Ministry of Education by the CEREQ (research and study centre on qualifications) and the discussions within the working groups, it was decided to:

-- reduce the number of different branches, by doing away with the traditional narrow specialisations according to type of machinery and by referring to the concept of occupational categories, grouping together similar types of activities. In the case of mechanical engineering, the main categories were machining, on the one hand, and assembly and maintenance, on the other hand;

-- maintain the two types of training, but to link them together: the second to provide the main core of the system and offer broader training, making it easier to pursue studies; the first to allow students to specialise and acquire more specific skills;

-- place greater emphasis, particularly in the first type of training, on teaching students the faculties and knowledge necessary in a more general framework for them actively to organise their own work.

329. In a second phase, and in application of the general policy to raise qualification levels, the creation of vocational baccalauréats affected several fields on the borderline between mechanical engineering and the different forms of automated systems. The aim of these new qualifications is to train workshop technicians, whose function is recognised in the collective agreement of the metallurgic industries.

330. In addition, mechanical engineering training "was the first to which the method of defining qualifications on the basis of profiles of the related occupational activities was applied; this led to two important changes:

-- priority was given to specifying the occupational profile to which the diploma related rather than to establishing the training content or academic status;

-- knowledge and skills acquired during training were evaluated in terms of actual job requirements rather than in terms of academic achievement".

331. Similarly, it was in these special fields that the first schemes mixing training and work experience were introduced, in the form of in-firm training periods assessed for the purposes of final examinations. These changes evidenced a transformation in the relations between training establishments and industry and tightened the links between the Education ministry and trade organisations. In the field of mechanical engineering, the latter play a particularly active role in discussing changes and conducting experiments.

332. However, it is also in mechanical engineering training, in particular, that some of the problems specific to the French context are encountered. For example, a recent report on the training of skilled workers showed an excessive tendency to prioritise the aim of raising the level of general training and theoretical training to the detriment of more practical apprenticeships. Only some manual jobs require more advanced theoretical knowledge and skills. Others need broader skills, adaptability and the ability to work in groups, and yet others rely essentially on traditional know-how.

333. The fairly characteristic trend in France towards higher levels of training and more emphasis on theory is compounded by a propensity for students to continue their education rather than join the job market and may exacerbate frustration caused by the gap between young people's expectations and the realities of the world of work.

334. The Flemish community of Belgium comes to fairly similar conclusions in its report, which stresses, nonetheless, that it is difficult to answer the question: "What are we to expect from tomorrow's workers?" Employers want the training given to young people to focus as much on character-building as technical achievements and they want them to be aware of the need for a permanent learning process.

335. Given the rapid pace of technical developments and the cost of equipment, it is no longer possible -- and may be unnecessary -- to equip education establishments with state-of-the-art machinery and increasingly difficult for such establishments to keep up with developments. Equipment can only be used for didactic purposes; students need to experience the world of work at first hand.

336. Training establishments also experience difficulties in finding competent training staff who are up to date with the latest new technology and in attracting young people to the vocational branches. For all these reasons, they need help from industry in providing information, technical resources and work experience opportunities.

337. According to some studies conducted in the Netherlands in the 1980s, training in mechanical machining had failed to keep pace with industrial developments. As a result of the difficulties mentioned above, it was backward in terms of both the programmes themselves and the equipment. Until 1990, only some of the top level secondary schools had been equipped with new machines.

338. One of the solutions to the problem has been to set up well-equipped regional centres accessible to both students and teachers and firms' employees who wish to acquire practical experience. Such centres have been opened on a gradual basis since the mid 1980s and are generally found to be satisfactory, although their role is sometimes still subject to discussion and poses problems of co-ordination with schools, from the point of view of equipment and timetable compatibility, cost and funding. The centres are expected to play a crucial role in adapting training to new technology, by serving as meeting places where experiments can be carried out and specialist training can be delivered.

339. The necessary catching up process which began a few years ago has now virtually been completed, thanks to a series of measures and schemes that brought important developments in a context of increased co-operation with firms and initiatives sometimes taken according to the principle of decentralisation. In particular, the system of apprenticeship was completely reorganised between 1981 and 1988. The three bodies previously responsible for apprenticeship were merged, so that the different schemes could be harmonised and brought up to date, and an additional apprenticeship was set up in new technology.

340. Measures taken within the framework of vocational education to bring training more into line with jobs included the development of modular courses and a training/work experience scheme, learning of basic skills and know-how to facilitate initial access to employment, and the introduction of new disciplines in which students can choose to specialise.

341. A new course has been created in production technology. However, since it is felt that basic education programmes will never be able to keep pace with rapid technological progress, students will need to adapt their skills to a particular firm or product during special proficiency courses. A report has recommended that the training/work experience scheme be extended, with a view to permanent training, as the best way of easing the transition to employment. However, the scheme is dependent on sufficient places being available in firms.

342. The efforts to develop a modular system are accompanied by the setting of targets for each level. The training structure for technicians is designed to delay specialisation as long as possible.

***Graphic arts and other fields***

343. The study conducted by the Netherlands also covered the graphic arts industry. According to this country report, trade unions usually only have a limited influence on training issues. The graphic arts industry, however, is an exception, given the highly developed social structure and manpower practices in this sector, on which the national training system is based. According to the report, the situation in the Netherlands has contributed to the creation and recognition of specialist training establishments. As a result of negotiations following the recent structural upheavals affecting this industry, the traditional rules have been eased somewhat but acquisition of the occupational diploma remains a condition for joining the trade.

344. In this context, graphic arts training is traditionally delivered mainly through apprenticeship, whereas in mechanical engineering there is an equal split between apprenticeship and full-time training. Since the 1960s, however, the system has been subject to continual change. The first trend was to try to train skilled workers to be more adaptable and better prepared for mobility, both horizontal (different activity) and vertical (promotion). To this end, a broader training system was set up, to be supplemented by proficiency courses. The second trend, in the mid 1980s, was to increase the flexibility of the training system, so that it could be better adapted to firms' needs.

345. Lastly, the third trend was aimed primarily at closer co-ordination between different types of training. In the printing industry, the first step was to set up a common course for the different types of apprenticeships. Then less specialised courses were set up, corresponding to fields of activity or production processes rather than specific trades, to try to improve the integration of the different training courses. Efforts are also under way to enhance co-ordination of the different fields of vocational training, for example by developing multidisciplinary training establishments. In the late 1980s, this trend led to the creation of printing schools which integrated the training given to apprentices in the context of their mixed scheme and several levels of full-time training. The result is a single structure geared to the needs of both firms and young people.

346. Generally speaking, a growing proportion of training is delivered in specialised training centres and based on simulated activities rather than direct experience of the workplace. Placements are increasingly offered by groups of firms rather than individual companies. These developments serve to broaden trainees' experience and consequently the skills they acquire are more easily transferable.

347. Efforts are currently under way to extend the practical training components in such a way that knowledge and skills can be applied to real-life situations, the links tightened between theory and practice, and the opportunities improved for trying out new equipment. The aim of the programmes is to enhance flexibility, particularly by means of a modular structure based on analyses of job profiles, which have the disadvantage of highlighting the more visible part of the occupational activity rather than the basic personal qualities, which are becoming increasingly important.

348. Looking ahead to the future, the report by the graphic arts training centre mentions plans to increase firms' and trainees' freedom of choice by developing modular courses and offering a wider range of training paths. A system will have to be set up for recognising qualifications based on value units, but steps will also have to be taken towards a recognised national diploma. Lastly, if skills are to be adapted to needs, special courses will have to be set up to meet the needs of particular groups: women, the long-term unemployed, ethnic minorities and the disabled.

349. The Finnish report on the graphic arts industry is similar in some ways to the Netherlands report as regards the distinctive features of the sector and the role of labour relations. As early as 1956, the collective agreement addressed the question of training, considering it to be an important factor for both a firm's production efficiency and the well-being of its workers. It decided the creation of a joint committee for training, as an "original and unique form of co-operation in the field of collective bargaining".

350. One of the functions of this committee has been to help control the flow of apprentices, by adapting it to recruitment prospects linked to the economic situation. It has also been involved in setting up full-time training establishments in parallel to the continuation of the apprenticeship system. The training was geared to technicians from the 1960s and engineers from the late 1980s. Training is delivered according to a modular structure, designed to ensure flexibility.

351. The Canadian report deals in greater detail with the electricity industry, particularly the electronics sector. Canadian employers have been worried about the significant drop in the number of students in these fields throughout the 1980s, at the level of both technicians and engineers. The situation is probably linked to the fact that young people are not attracted to the branches of training leading to the production side of the electronics industry, to the lack of career prospects, and to young people's poor knowledge of the careers concerned. Another worrying factor is the slow growth in the percentage of women joining the industry, as a sequel to the poor attraction of science subjects in secondary education.

352. The system of training in this highly decentralised country is very varied. Each province defines its own types and level of training, delivered primarily by institutes of technology, but also the different types of college. The main discussions in this area focus on the absence of a national system of certification or recognised technical qualifications. The programmes and diplomas proposed by the different provinces lack coherence and co-ordination.

353. Firms and training bodies are interested in assessing the standards defining post-secondary technological training and in bringing the programmes of these training courses up to date. The possibility of setting up a national system is currently being examined, together with the question concerning the recognition of occupational skills acquired in this field.

***Remarks concerning the sector-based studies***

354. A few remarks are necessary concerning this more detailed analysis of a few occupational sectors. The first remark concerns the very concept of "sector". One of the problems posed by the definition of occupational training programmes in relation to the changing qualifications stems from fact that an analysis of economic developments is only really relevant in relation to one particular sector, the specificity of its dynamic qualities, its markets, products, technologies and organisation. However, the map of occupations and qualifications is not the same as the map of sectors, since most of the former

are spread over more than one sector or branch of activity. From the point of view of training, it would be more relevant to consider occupational categories but an analytical approach and the system of representation of the different social partners are less suited to a division made in that way.

355. The second, and most important, remark prompted by the analyses in this report concerns the wide range of different sectors and occupational categories, and hence the problems involved in drawing up training policies. The diversity has been evident from several standpoints:

-- at economic level, and irrespective of the economic situation, some sectors are booming (tourism, in the broad sense), whereas in other sectors in the OECD Member countries (construction industry) the workforce is in decline;

-- depending on the sectors or occupations, the differences between the dominant features of the work involved and the qualifications required pose clear problems for training, e.g. the varying role of theoretical knowledge and skills and practical know-how, of knowledge in relation to behaviour, and, in particular, the increasingly important role of human relations. The different training methods are more or less well-suited to these requirements;

-- training is also a problem with regard to the different organisational structures specific to the different sectors: firms that are essentially large or small, worker representation and influence of trade unions, nature of labour relations. The graphic arts industries is an example of the impact the specific features of a sector can have on the way training is organised;

-- all these factors - economic data, structure and content of qualifications, the way the sector is organised - influence the characteristic identity of the workers employed in the particular sector or occupation: age (and, therefore, replacement and recruitment level), sex, level of education, and occupational mobility, as well as the manpower management methods used: conditions of access to employment, type of recruitment, importance of diplomas;

-- an important distinguishing factor emerging from the analyses is the extent to which a given sector or occupation attracts (or sometimes, on the contrary, "repels") young people. It is this factor which largely determines the flow of students to one or other type of training or speciality and it needs to be taken into account in training plans;

-- lastly, the first part of this report showed that many countries are considering the problem of certification of occupational diplomas and would like to see certification on a national basis. It is difficult to solve this problem with a purely sector-based approach.

356. Although it is necessary to draw attention to the diversity that exists, reference to such diversity is not on its own sufficient because it raises the question of the coherence of the training system. Several factors argue in favour of a global approach to training:

-- as suggested above, a number of training fields concern more than one sector of economic activity, so that a sector-based approach is not sufficient;

-- if students' motivations and interests are to be taken into account, the possibilities open to them for transferring from one type of training to another and diversifying must be maintained and, where feasible, made easier;

-- lastly, the analysis of development trends in relation to regards qualifications shows that the labour market attaches growing importance to general qualifications, in other words skills and behaviour required in all fields of occupations. The suggestion from this is the need for a global approach, if possible, to harmonise the way this requirement is met by the different occupational branches and, above all, to ensure co-ordination with general education and training which has perhaps the most important contribution to make in ensuring young people acquire these basic qualifications.

357. The problem facing training systems is therefore how to reconcile the need to adapt to the diversity and specific identities of occupational fields with the need to maintain a coherent system. Different countries solve the problem in different ways: those countries which give priority to centralisation and the role of the public authorities attach greater importance to the second need, whereas others (organised according to the principle of decentralisation and actively in favour of developing the private sector) prioritise the first need. Consequently, a comparative analysis must take into account the features specific to the individual sectors and those specific to the country as a whole.

## III. Final Remarks

### Adaptability, control, role of the different actors involved

358. The preceding summary tried to reflect the information given in the national reports on the new role of vocational education and training as accurately as possible given the wide range of different institutions and the history of each country. An attempt must now be made to extract a few guiding lines and to take a step back from the individual reports, many of which have been drawn up by staff actually working within the education authorities. As a result, they tend to suffer from a two-fold limitation which we will refer again to later:

-- many of them fail to see beyond the mental boundaries of the training system itself;

-- most tend to analyse the policies in operation and the goals pursued rather the the results achieved.

359. Detailed research would be needed to cover such a broad set of questions as the basic principles and conditions governing the functioning of systems in different surroundings, and the questions would have to be studied from the point of view of both a sociological analysis and a political debate. Clearly, research on this scale would exceed the scope of this summary, but if the intention is to do more than simply describe developments, a number of general questions need to be asked in place of conclusions. For example:

-- is it possible to speak of convergence between the training systems in the OECD countries?

-- are there any signs, in particular, that they are trying to improve their ability to react and their flexibility?

-- to what extent is a greater ability to react compatible with the need to control the system?

-- what is the role of the different actors in controlling the system?

360. These questions cannot take into account the full wealth of information contained in the different reports prepared for the VOTEC project. They ignore important aspects such as funding, and educational structures and organisation, which are on the edge of this study but which are addressed in a number of more detailed reports. The following general considerations are essentially based on these more detailed reports and do not claim, therefore, to give a full representation of the situation in all the OECD member countries.

***Preservation of specific national features and common trends***

361. In the present context of growing internationalisation and a greater abundance of international comparisons, convergence is a subject of considerable discussion: given the universality of technology and economic constraints, are national practices tending to become more uniform (as some management literature, and also some examples of consumer models would suggest)? And if national practices are converging, is it owing to the influence of what is "fashionable" or to imitation? Do common constraints necessarily require common solutions, or are socio-cultural and institutional differences a permanent phenomenon which signifies that each individual country reacts in a different way to these universal challenges (as many sociological studies suggest)?

362. The preceding analyses suggest the need for different responses. It is true, on the one hand, that they reveal a number of common trends: increase in the number of people receiving VOTEC, lengthening of training, efforts to increase the flexibility of the system, desire to involve social partners more closely and increase the participation of firms, development of continuing training and efforts to promote better assessment of the achievements and quality of the system and better validation of results.

363. On the other hand, however, the analyses highlight the extreme diversity of training systems and the persistence of strong cultural differences at the levels of institutions, training structures and management practices as well as with respect to the behaviour of the different parties concerned. These differences are perhaps most acute where there is decentralisation, since they concern both the institutions and cultural tradition. However, it is probably also here that the most extreme cases are likely to converge slightly because of the problems they pose.

364. Given the persistent quality of specific national features, it is possible to affirm that a uniform training system is unlikely to develop in the foreseeable future, but also that the solutions adopted in one country cannot easily be transposed to another country.

***Responsiveness and flexibility***

365. The responsiveness of education and training systems to a context of change was a central theme of this study. According to the Netherlands report, responsiveness means "the capacity of a vocational training system to react to the changing environment while at the same preserving its own typical features". It is often associated with flexibility, which can be interpreted both in a broad sense, insofar as it also helps fulfil other requirements, such as improving management of the system, and in a narrower sense, since flexibility may be purely internal, rather than oriented towards external surroundings.

366. Such an approach is justified given the extent of the changes that have taken place, particularly in the world economy, and the fact that these changes would appear to be increasingly unpredictable. If the needs the systems will be asked to meet in the future are unpredictable, one solution is to ensure the systems are more adaptable.

367. But must adaptation be a one-way process? In this respect, the Netherlands report asks whether training systems must above all be capable of reacting to external influences, particularly economic influences, or whether they must also be "proactive". According to the report, control mainly concerns the system of training, changes to which are increasingly dictated by firms' needs, rather than occupational structures or firms' contributions to training. However, the report also notes that the training system has a certain ability to innovate and anticipate change and that the persons in charge of preparing training programmes, even in industry, have clearly decided not to attempt to include the whole range of activities encountered in the workplace.

368. Along the same lines, the French report concludes that the training system has definitely shown a great capacity to adapt, particularly to technological advances. "However, it does not operate according to any rule based simply on the need to react to changing economic requirements". The extent of youth unemployment shows the gap and often tension that continue to exist, despite recent progress, between the world of training and the production environment, the role of firms' manpower practices in this context and the problems young people have in crossing over to the labour market on completing their education and training. In other words, the training system continues to function according to its own specific logic.

369. Indeed, many national reports give the impression that, although the nee to adapt to the new economic requirements is a clearly stated objective, the analyses focus essentially on the internal workings of the training system. In most cases, information concerning the external surroundings is confined to simple references to new economic requirements and does not explain in any detail the conditions which allow -- or otherwise -- young people who have completed their training to become integrated in the labour market and society as a whole. Although it is these conditions which would ultimately test the adaptability of training systems, they are scarcely mentioned in the reports.

370. A fortiori, the production system also operates according to its own logic, not only because changing organisational methods can remain indifferent to the changing qualifications (as suggested by the above-mentioned report on the Netherlands), but also because the development of VOTEC and the raising of qualification levels, although they can improve the ability of the economy to compete, would not alone be sufficient to solve the problem of unemployment, which depends on many other factors as well. This fact is emphasised in comments in the report on Iceland and also in the French report which regrets the tendency to use the education system as a scapegoat and to accuse it of being the main cause of unemployment through its inability to adapt. Such criticism fails to take account of the role of manpower practices and the influence of employment conditions on young people's choices and motivations. It is true, nonetheless, that some systems, and particularly those based on a mixture of school-based training and work experience, do more than others to facilitate the transition from school to active employment.

371. Once the limits of interactiveness have been recognised, the conclusion drawn is that training systems can be adaptable in different ways: by

increasing the duration and raising the level of training; by rearranging organisational structure and streams; by redesigning curricula; and by reforming administration and operating methods.

372. This said, it is questionable whether the transformation of a training system is simply or even mainly a matter of goals, structures and cut-and-dried indicators. Experience, and the analysis of several national reports, show that many reforms are either never implemented in practice or re-directed, so that frequently there is a discordance between intentions and reality. For example, the United States report mentions the tendency for schools to set too much store by reforms and to give new names to old measures simply in order to obtain funding. This situation is not confined to decentralised systems. Examples can also be found in the reports on France and Iceland of the way in which results in practice sometimes differ from original intentions. The ways in which the system operates and the prevailing culture in which it bathes are no doubt the most important factors. But these are difficult to analyse and their evolvution is slow.

***Ways of controlling the training system***

373. Given that training systems are traditionally conservative and tend to function according to an internal logic, any improvement in their ability to react to change may be regarded as positive. Generally, it is a case of responding to market -- and therefore economic -- needs and is frequently associated with a trend towards decentralisation, since the ability to respond more effectively to these needs depends on greater market proximity. This positive development raises at least two questions:

374. *a)* Improving the system's ability to respond to needs presupposes these needs can somehow be assessed. Are they needs experienced by firms, a region, or a sector? Are they medium or short-term needs? Who will define them? Each of these individual questions triggers a whole series of further questions. The lack of global forecasts has already been mentioned. At decentralised level, if the market is taken to mean firms, it must be noted that the latter generally find it hard to define their needs, in particular because they lack a vision extending beyond the short term, given their dependence on a changing economy. Their forecasts tend to focus more on commercial and financial data than on qualifications. They (particularly smaller firms) are often more interested in satisfying their immediate needs for specific skills than in developing a potential source of broader qualifications in the long term that would prepare them for future developments and facilitate mobility. Lastly, while it is essential to take account of the local needs of the labour market, particularly in order to evaluate the number of workers that could be recruited, it is questionable whether the specific local and regional features of qualifications should be taken into account when defining the content of basic education and training programmes.

375. In response to these concerns, the policy adopted in Germany aims to go beyond immediate and local needs, by defining broader training programmes capable of meeting the longer-term needs of representative national bodies which emerge during a long process of consultation. It is significant that

this type of control is imposed not so much by the German government as by the social partners. Similar, increasingly permanent, involvement in training systems has also been observed in other countries.

376. *b)* In addition to purely economic considerations, it is also difficult to see how changes to vocational education and training systems can ignore either the need for these systems to form a coherent whole with the rest of the education system or concerns on a broader scale, such as employment and the struggle against social inequality which are addressed in the context of national policy.

377. This need can even be found in countries with a decentralised administration, like the United States, where control may be mainly indirect, based on funding arrangements. Funding is seen to be linked to social objectives, particularly in relation to vocational education. However, does this constitute a sufficient means of control? This is a question triggered by the report which points out that "achieving the necessary reform of the training system requires firm and sustained leadership from the federal government and the states, co-operation between these two levels and their various government departments, and commitment from legislators to place preparation for work high on the public policy agenda". The report also notes that in the context of decentralisation neither local authorities (because of their limited size) nor the federal administration with its limited staff have adequate technical resources.

378. The need for a global approach is also emphasised in another passage in the United States report concerning disadvantaged young people. According to the report "the intractable problems of urban education do not lend themselves to isolated, categorical funding solutions and instead are best addressed by much larger-scale efforts which involve the entire school community and all of the school's resources" (and not only those set aside for vocational education).

379. Similar preoccupations can be found in other decentralised countries, such as Canada, where the problem concerns the respective roles of the federal government and provinces, on the one hand, and the public and private sectors, on the other hand. The report presents the arguments upheld by the supporters of both sides and, in addition, draws attention to the tension that exists between the long-standing concern to provide a system that is fair and the desire for efficiency and adaptability. Some federal programmes are geared towards both specific target groups (women, minorities, the disabled) and the training of a skilled workforce capable of meeting market requirements. Since priority tends to be given to the second objective, the programmes have been criticised for their lack of fairness.

380. The reform process under way in Australia for the past few years has been carried out under the main responsibility of the commonwealth government, with support from the states. "Although it has had little constitutional responsibility for the actual running of the system, the Commonwealth has sought to provide a national context in which the system might operate." Given that most training is delivered by the public sector, it is not surprising that the reform process has been led by the government.

381. It is interesting in this context to note that countries such as Finland and Sweden have, on the contrary, recently introduced measures taking them a long way towards major decentralisation of responsibilities at the level of training establishments, with a view to providing better solutions to not only market requirements but also the increasingly diversified social demands. How do they intend to solve the problem of control as regards, for example, social inequality? To what extent will individual interests be prevented from dominating the collective interest? Has sufficient account been taken of the collective interest, given the specific cultural features of these countries which would enable them to adopt different solutions to those prevailing in a country such as France where it has been seen that the first moves towards decentralisation were not always entirely beneficial?

382. Another question concerns the development of methods for assessing the results and efficiency of training. Should it be based essentially on criteria concerning the internal management and functioning, or should it include the quality of training, or even try to carry out a more global assessment of the socio-economic role of the training system and its adaptability?

383. A more detailed analysis would need to distinguish between the quantitative aspects involved in control (number of students and corresponding resources) and the qualitative aspects (different branches, subjects covered in the programmes and examinations). The main quantitative factor concerns control of the flow of students, first accepted for training and then looking for a job. The problems encountered in trying to compile quantitative forecasts of how training needs can be expected to develop help to explain why student numbers are generally controlled upstream (social demand resulting from the larger number of students completing basic education) rather than downstream (job opportunities on the labour market). Is it accurate therefore to speak of responses to economic requirements? For example, when vocational training takes the form of apprenticeship, there can be a problem adjusting the flow of candidates for training to the number of places available in firms.

384. Demographic growth, the state of the economy and corporate policies all play a part in this adjustment, as the German report shows. Insofar as Germany is often quoted as an example and its system of control is studied in great detail in the report, it is worth drawing particular attention to the situation in this country. The report points out that "the range of resources available to the public authorities for controlling the capacity of the vocational training system were fairly limited until the mid 1970s. Faced then with a shortage of skilled manpower and, later, insufficient jobs for those who had received training, the Federal government, the governments of the *Länder*, and the local authorities felt they had no choice but to become involved in the transition process which thus far had traditionally been governed by the market." Each of the authorities reacted with different measures, according to their respective legislative powers. Priority was then given to the providing adequate training facilities for disadvantaged young people.

385. This involvement of the public authorities took several forms: more possibilities for training in schools, introduction of out-of-school training programmes, particularly for disadvantaged young people, setting up of training centres outside firms to complete the dual education system, programmes for researchers. However, quantitative adjustment of the number of places

available in the dual system has continued to depend mainly on the self-control mechanisms found on the market. Two factors play a crucial role in this respect: population figures (characterised in Germany by a significant drop in the number of young people) and the state of the economy. In its regulatory measures, the federal government has been careful not to upset the balance. The chambers of trade and employers' organisations, for their part, have put pressure on their members, when necessary, to accept more students for training than they actually require. Lastly, schools have had to adapt their training capacity to the number of apprenticeship contracts signed by firms.

386. It is clear that complicated adjustments are necessary between the constraints and motivations of the different parties at stake: public authorities, firms and people likely to benefit from training. These adjustments are not always sufficient to ensure satisfactory control, particularly between the distribution of training and the structure of occupations, with respect to which the training market is rather inflexible. However, there are many flexible components involved in the training delivered by firms: they can be more or less demanding in terms of the level of apprentices they recruit, provide training that differs according to apprentices' level of education or is even adapted to their individual needs, or organise extra training beyond their legal obligations (in particular, in the case of advanced technologies). Lastly, an important factor for the flexibility of the system is the diversity of the general education levels preceding apprenticeship.

387. The Netherlands report shows this problem in a different light, emphasising the varying degrees to which training systems have been institutionalised, depending on the particular sector. When the degree of institutionalisation is high (as in the graphic arts industry), the system itself becomes more important and develops its own dynamic momentum. When there is a low degree of institutionalisation (as in tourism), training establishments can be more independent and may also be more receptive and innovatory. The down-side is a danger of conservatism in the former and the absence of a coherent system in the latter.

388. This analysis serves to qualify any attempt to draw a dividing line between highly decentralised countries, where control is essentially left to the market, and countries which use other forms of control, involving more measures taken at national level. Furthermore, a classification of the countries in this way would have to be reviewed to take account of developments currently under way. nonetheless, without going as far as formal classification, it can be said that control does pose a problem, particularly in the new context of adaptation to a changing world.

***The role of the actors involved and the importance of consultation***

389. Whichever method of control is used, a large number of different actors are automatically involved, either to take part in the decision-making process, or implement the decisions taken. The German report stands out as a vigorous defence of active participation by the social partners. According to the report, "the statutory participation of the social partners is essential for

efficient management of the dual system of vocational training; if the market were the sole controlling force, there would be a danger the system might take the wrong course. Furthermore, any attempt by the State to assume full responsibility for controlling the training system would rapidly come up against serious obstacles". The involvement of the social partners in controlling the public sector helps to ensure that the results of the different sectors or types of in-house training are taken into account when setting training standards. It can also curb the tendency to create specific training systems for each sector of activity.

390. Similar analyses are found in the Netherlands report which emphasises the correlation between the relatively recent discovery of the need to step up training in order to cope with the problems posed by the economy and the new role of the social partners in the decision-making process. The report shows that both employers' and trade union organisations have put pressure on their members to steer their demands in this direction. The tightening of links between firms and training establishments seems to have been connected with the greater degree of autonomy now entrusted to the latter. The report notes that the way these links develop in the future will depend above all on the opportunities that exist for ensuring a balance between a national and a regional approach to the qualifications structure and between the respective influence of employers' and workers' associations.

391. This analysis of the national reports has demonstrated that many other countries were aware of the need to increase the involvement of the social partners, particularly in the definition of training objectives and efforts to bring training more into line with economic requirements. However, the problem varies considerably, according to the:

-- sectors: the Netherlands report contains important details concerning the very different levels of influence enjoyed by the social partners, depending on the degree of institutionalisation and the traditions specific to each sector;

-- type of partner: the analysis has shown that even when employers' and workers' representatives are theoretically on an equal footing, they do not generally have the same means at their disposal for conducting discussions and taking action;

-- type of firm: the interests of large and small firms, high technology sectors and small-scale activities may vary. It has been noted that some firms (particularly the smallest) may have a short-term view of training and may be tempted to give priority to the learning of operational skills instead of investing, on a long-term basis, in delivery of a broader education (general knowledge and skills, elements promoting a global understanding of the world of work, character-building) of benefit to not only young people but also the society at large.

392. As mentioned before, a process of consultation takes time. It should be pointed out, however, that the more intensive this process is during the preparatory stages of decision-making, so the easier the process of adapting to change and implementing the decisions will be.

393. Lastly, and above all, the success of consultation presupposes a favourable environment and is generally helped by past tradition. Once again, it is not possible to ignore the part played by either history or culture or the specific features of the different national systems. Simplistic transpositions and solutions must therefore be treated with caution, although the value of international comparisons is in no way undermined as a result. On the contrary, it is hoped that this summary will prompt readers to study the national reports which come after this volume in greater detail and that it will promote exchanges of experience.

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